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# Discrimination-Based Attributions for Mistreatment Affect Continuity of Care

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LOMA LINDA UNIVERSITY  
School of Behavioral Health  
in conjunction with the  
Faculty of Graduate Studies

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Discrimination-Based Attributions for Mistreatment Affect  
Continuity of Care

by

Gregory John Regts

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A Thesis submitted in partial satisfaction of  
the requirements for the degree  
Doctor of Philosophy in Clinical Psychology

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June 2013

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Each person whose signature appears below certifies that this thesis in his/her opinion is adequate, in scope and quality, as a thesis for the degree Doctor of Philosophy

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## ABBREVIATIONS

|       |   |
|-------|---|
| SEM   | Structural Equation Modeling            |
| CFI   | Comparative Fit Index                   |
| RMSEA | Root Mean Square Error of Approximation |
| AIC   | Akaike Information Criteria             |
| LM    | Lagrange Multiplier                     |

## ABSTRACT OF THE THESIS

### Discrimination-Based Attributions for Mistreatment Affect Continuity of Care

By

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Doctor of Philosophy, Graduate Program in Clinical Psychology  
Loma Linda University, June 2013  
Dr. Hector Betancourt, Chairperson

Previous research has described the role of perceived healthcare mistreatment and negative emotions in continuity of cancer screening care for both Latino and Anglo American women (Betancourt, Flynn, & Ormseth, 2011). From a social psychological perspective, cognitive processes, such as the causal attributions patients make for the way they are treated, are expected to play a role in how mistreatment affects emotion and behavior. Based on Weiner's attribution theory of motivation and emotion and Betancourt's integrative model of culture, psychological processes, and behavior, the present study examined the influence of attributing healthcare mistreatment to discrimination on continuity of cancer screening care in a sample of 217 Latino ( $n = 101$ ) and Anglo ( $n = 116$ ) American women. As proposed, cumulative exposure to mistreatment indirectly influenced continuity of care through discrimination based attributions for mistreatment and related emotions. Additionally, it was found that attributing mistreatment to discrimination influenced continuity of care through its effect on related emotions. Finally, the results suggest that these relationships may vary based on ethnicity. Findings extend research regarding the role of cognitions and emotions in determining healthcare seeking behaviors such as continuity of care, and highlight the importance of discrimination based attributions in the patient-provider relationship.

# **CHAPTER ONE**

## **INTRODUCTION**

Of increasing concern for health disparities research over the past decade has been the psychological effects of perceived discrimination and the subsequent deteriorations in health outcomes (IOM, 2003; Williams, 2005; Williams, 2003). Personal experiences of discrimination, including perceived racial/ethnic bias, are considered to be significant instigators of stress. The effects of discrimination on stress over one's life span have been implicated in increased risk for cardiovascular diseases and reactivity (Dimsdale, 2008; Sawyer et al., 2012), and other health issues (Pascoe & Richman, 2009). Perceived discrimination is also related to decreases in health behaviors (Pascoe & Richman, 2009; Ryan, Gee, & Griffith, 2008), such as how individuals seek and maintain recommended levels of healthcare (Crawley, Ahn, & Winkleby, 2008). Of specific interest for health disparities research, however, is the indication that racial/ethnic and economic minorities are much more likely to attribute mistreatment in healthcare settings to discrimination (IOM, 2003). The subsequent effects of these attributions on healthcare seeking behaviors such as continuity of cancer screening care, and the potential for differential effect based on ethnicity (Betancourt, Flynn, & Ormseth, 2011) for Latino and Anglo women in particular, indicate the necessity for further identifying the role of discrimination based attributions for mistreatment in the patient-provider relationship.

Healthcare discrimination refers to the extent to which prejudicial or stereotyped attitudes and beliefs on the part of the healthcare provider results in unfair treatment that systematically disadvantage members of a particular group. In the U.S., minority groups (i.e. Latinos, African Americans, and Asians) are more likely than mainstream white

(Anglos) Americans to perceive that they received poorer medical care due to race/ethnicity, and that medical staff treated them with disrespect based on race/ethnicity and how well they spoke English (Johnson, Saha, Arbelaez, Beach, & Cooper, 2004). Specifically, for Latinos, being foreign-born and speaking a language other than English at home significantly increased the likelihood of reporting discrimination (Lauderdale, Wen, Jacobs, & Kandula, 2006). However, it is in its effects on health that we see the potential influence of perceptions of discrimination on the perpetual disparities observed between ethnic groups in the US. Specifically, higher levels of perceived discrimination were related to more negative health outcomes, increased participation in unhealthy behaviors (Pascoe & Richman, 2009), increased stress reactions (King, 2005), and more negative mental health outcomes such as psychological distress, suicidal ideation, anxiety, and depression (Hwang & Goto, 2008). A potential determinant of these outcomes, and the subsequent health disparities, may be the negative effect perceived discrimination has on health behaviors, particularly healthcare utilization.

For Latino American women specifically, disparities in breast and cervical cancer screening present an area of concern potentially affected by perceptions of discrimination. For example, Facione and Facione (2007) found that Latino women who perceived prejudice in healthcare delivery were more likely to be non-adherent to cancer screening recommendations. By obtaining cancer screening care at recommended levels, patients can significantly improve treatment outcomes and lower cancer-related mortality rates (Nelson, Tyne, Naik, Bougatsos Chan, & Humphrey, 2009) partly due to detecting cancer at an earlier stage (Mainous, Kern, Hainer, Kneuper-Hall, Stephens, & Geesy, 2004). However, under-utilization of cancer screening services by U.S. Latino women

remains (American Cancer Society, 2011). Although breast and cervical cancer screening rates in the U.S. have improved over the past 20 years, rates for Latino American women continue to lag behind those of Anglo women (Reis, Melbert, Krapcho, et al., 2008). Moreover, research indicates that Latino women have a lower likelihood of cervical cancer screening than other minority groups (Bazargan, Bazargan, Farooq, & Baker, 2004), with Mexican American women in particular being less likely than other Latino subgroups to have received breast or cervical cancer screening (American Cancer Society, 2011). Consequently, Latino women are more likely to present with later stages of cancer (Li, Malone, & Dailing, 2003; Biffi, Myers, Francoise, Gonzalez, & Darnell, 2001) leading to poorer outcomes.

Continuity of care is a particular factor that has been shown to be related to improved cancer screening rates (Fenton, Franks, Reid, Elmore, & Baldwin, 2008; Menec, Sirski, & Attawar, 2005; Cabana & Jee, 2004; O'Malley, Forrest, & Mandelblatt, 2002), therefore, improved cancer outcomes. Moreover, having a regular source of care is one of the most consistent predictors of cancer screening among women of all income and demographic groups (O'Malley, Forrest, & Mandelblatt, 2002). Defined as a consistent pattern of involvement and relationship with the same health care professionals, continuity of care helps to foster a relationship characterized by trust and a sense of responsibility (Saultz, 2003). Naturally, the deterioration of this relational aspect that can result from perceived discrimination, can likely influence discontinuity of care. Moreover, evidence suggests that Latinos display lower levels of continuity of care than mainstream Anglo Americans even after controlling for the effects of health insurance status (Doescher, Saver, Fiscella, & Franks, 2001).

Studies suggest that patient perceptions regarding the quality of their healthcare influences breast and cervical cancer screening and continuity of care (Blanchard & Lurie, 2004; Facione & Facione, 2007). Moreover, research has identified that perceptions of quality of healthcare vary for different ethnic populations (Blendon, Buhr, Cassidy, Perez, Sussman, Benson, & Herrman, 2008). Specifically, some Latino populations, including Mexican Americans, report significantly lower quality of care than Anglo Americans including feeling listened to and feeling comfortable asking their healthcare professional questions. Perceptions of mistreatment like these can have a direct negative effect on continuity of cancer care (Betancourt, Flynn, & Ormseth, 2011), likely due to the breakdown of the necessary trust within the patient-provider relationship. Consequently, health disparities research must seek to identify those factors most relevant to patient perception of care. Therefore, researchers must identify the specific consequences of perceived mistreatment that have a more proximal effect on whether patients discontinue care in order to inform more specific intervention strategies.

In a recent study (Betancourt et al., 2011), it was observed that perceived mistreatment negatively influenced continuity of care for Anglos and Latinos, but the relationship for Anglos was direct whereas the relationship for Latinos worked indirectly through negative, anger-related emotions. These results highlight the fact that the influence of perceived mistreatment on continuity of care is not a simple relationship, and that there are more psychological processes involved. Moreover, the research suggests that cultural differences may play a significant role in how one perceives and responds to healthcare mistreatment based on the moderating role of ethnicity. Although negative emotional reactions to healthcare mistreatment, such as anger (Benkert & Peters, 2005),

and the significance of emotional processes in determining continuity of care have been identified in the literature (Betancourt et al., 2011; Tucker, 2008), there remains a need to identify the cognitive factors that play a role in determining the effect of emotional reactions to perceived mistreatment on healthcare seeking behaviors such as continuity of care.

Based on previous literature, discrimination based attributions for mistreatment may be a cognitive process most influential in emotional reactions to mistreatment and the related healthcare seeking behaviors. While much of the literature on discrimination focuses on perceptions of discrimination based on *race/ethnicity* (Williams & Muhammad, 2009), the present study focused on discrimination based attributions about both ethnic *and* non-ethnic personal characteristics in order to capture the effect that perceptions of discrimination as a whole have on relevant emotions and healthcare seeking behaviors. In this way, the present study is interested in discrimination based attributions for mistreatment, particular to interactions with the healthcare professional. Therefore, the cognitive variable of interest was the extent to which patients attribute healthcare mistreatment to discrimination.

### **The Present Study**

The aim of the present study was to evaluate the effect that discrimination based attributions for mistreatment have on continuity of care both directly and through related psychological processes (i.e. negative emotions). Relationships were investigated among Latino and Anglo American women who reported experiencing mistreatment by their healthcare professional during routine breast and cervical cancer screening exams. This



study was guided by Weiner’s attribution theory of motivation and emotion (Weiner, 1995) and Betancourt’s (Betancourt & Flynn, 2009) theoretical model for the study of culture and behavior recently adapted for health behavior (*see* Figure 1).

Weiner’s attribution theory of motivation and emotion helps to describe the link between cognitive processes and emotional consequences as they relate to social conduct (Weiner, 2005). According to his theory, emotional consequences of an outcome or behavior on the part of others are determined by the controllability one ascribes to that event. Moreover, the model suggests that attributions guide one’s feelings, but emotional reactions motivate and direct behavior. The theory would suggest that attributing mistreatment to discrimination, being controllable, would maximize negative emotions (e.g. anger, disgust) leading to avoidance behavior. As such, the theory is particularly relevant for describing the patient-provider relationship and the consequences for healthcare seeking behavior.

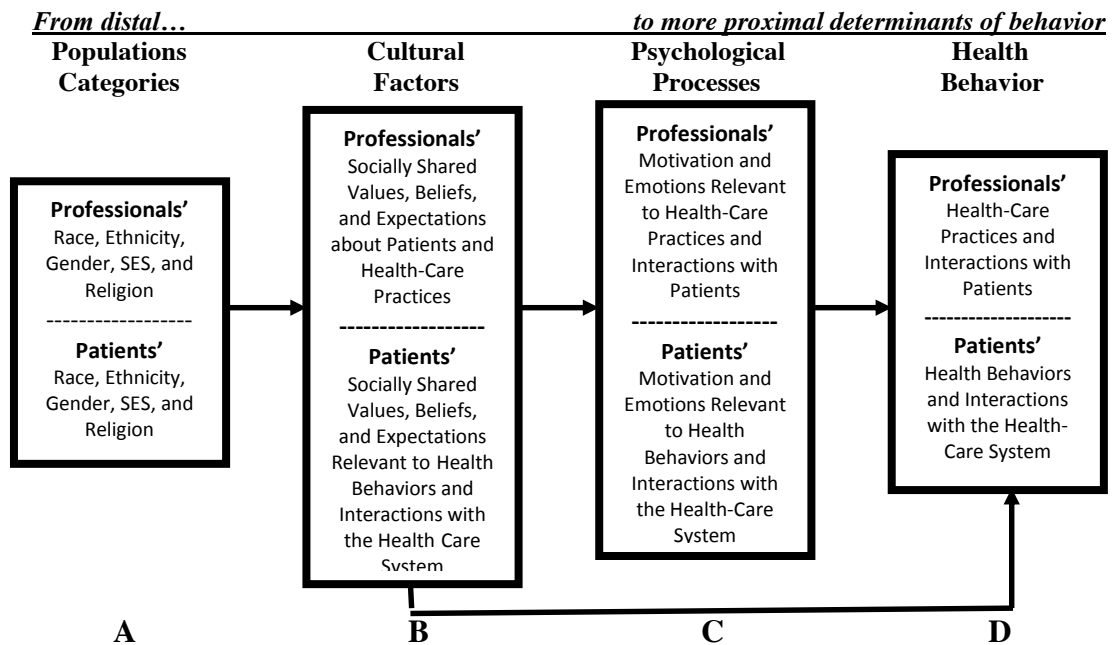


Figure 1 Betancourt’s integrative model of culture, psychological processes, and behavior adapted for the study of health behavior (Betancourt & Flynn, 2009).

Betancourt's integrative model for the study of culture, psychological processes, and health behavior recognizes the influence of a patient's own cultural beliefs, values, norms, and expectations about healthcare professionals on health behavior, as well as the proximal influence of psychological processes. By indicating that cultural differences may more fully explain cognition, emotion, and health behaviors when compared to simply using demographic variables, the model represents a conceptual advance in understanding potential factors relevant for health disparities research. Although the current study focused on psychological determinants of health behavior, therefore, does not specifically evaluate the role of culture, potential differences in the relationships between study variables by ethnicity may suggest general differences in culture.

To date, research on Betancourt's model for the study of culture and health behavior has indicated the potential for differential effects of culture based on moderating effects of ethnicity (i.e. Latino, Anglo) on continuity of cancer care and screening. Specifically, research has indicated the role that cultural beliefs regarding the healthcare professional play in influencing negative emotions and continuity of care (Betancourt, Flynn, & Ormseth, 2011). In order to describe the proximal determinants of healthcare seeking behavior more specifically, research must focus on particular cognitive processes within this model. The present study grows out of these needs, guided by evidence for the attribution, emotion, and behavior relationship.

Consistent with previous research, it was hypothesized that mistreatment would negatively influence continuity of care both directly and indirectly through discrimination based attributions for mistreatment and attribution-dependent negative emotions. This general hypothesis was tested through three specific hypotheses. First, it was

hypothesized that discrimination based attributions would mediate the influence of mistreatment on negative emotions. Second, it was hypothesized that discrimination based attributions for mistreatment would negatively influence continuity of care both directly and indirectly through negative emotions. Third, it was expected that the role of attribution-emotion processes on continuity of care would be moderated by ethnicity such that negative emotions would negatively effect continuity of care for Latinos, but not Anglos.

## CHAPTER TWO

### METHODS

#### Participants and Procedures

Data were collected as part of a larger research project funded by a grant from the American Cancer Society designed to study the role of culture in patient-provider relationships and cancer care among Latino and Anglo women in Southern California. Study participants were recruited using multi-stage, stratified sampling<sup>1</sup> in order to ensure nearly equal proportions of the total population across income, education, and age levels. Recruitment occurred among intentionally diverse areas in Riverside and San Bernardino Counties (e.g. supermarkets, churches, mobile home parks, other community settings) at which participants were asked to complete a questionnaire regarding their health experiences and opinions. Following the provision of written consent, participants were given the option of completing the questionnaire in English, Spanish, or to have it read aloud to them. Participants were given \$15 for participation in the study. At the time of data collection, bilingual research assistants were available at the recruitment sites in order to screen participants, explain study objectives, describe risks and benefits, and to obtain informed consent.

Women were eligible to participate in the larger project if they were: 1) Latino or Anglo American, 2) at least 20 years of age, and 3) able to read in English or Spanish. For the current study, women were eligible if they reported experiencing mistreatment during breast and/or cervical cancer screening exams. Following recruitment screening

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<sup>1</sup> Based on U.S. Census tract data from the Federal Financial Institutions Examination Council

and data collection, there were a total of 335 women who completed questionnaires. Of these, 225 reported experiencing mistreatment. Following evaluation for missing data, 217 participants were included in the analyses (Latino = 101; Anglo = 116).

The measurement instrument was developed using a mixed methods, bottom-up, instrument development approach intent on identifying and maintaining the cultural appropriateness in measurement that has been utilized in previous research (Betancourt et al., 2010).

## **Measures**

### ***Cumulative Exposure to Mistreatment***

Cumulative exposure to mistreatment by a healthcare provider was assessed with a 24-item scale in which each item indicated a different instance of mistreatment. The scale measured the collective amount of healthcare mistreatment experiences as reported by the participant. Participants were asked if they had experienced specific instances of mistreatment with their health professional during routine breast and/or cervical screening exams. Principal axis factor analyses confirmed a one factor structure for both Latino and Anglo American samples. The scale demonstrated strong reliability for Latino ( $\alpha = .93$ ) and Anglo ( $\alpha = .94$ ) women (Overall:  $\alpha = .94$ ). Scores were derived by summing the total instances of mistreatment endorsed by participants representing their cumulative exposure to mistreatment.

### ***Discrimination Based Attributions for Mistreatment.***

A scale was developed to assess the extent to which the patient attributed the

experienced mistreatment to discrimination related to various personal characteristics of the participant. Discrimination based attributions were assessed using 10 items with the question stem “The health professional acted this way because of...” For each item, participants were asked to rate the extent to which they attributed the health professional’s behavior to personal characteristics (e.g. my health condition, my education, my gender, my income, etc.) on a 7-point Likert scale (“strongly disagree” = 1 to “strongly agree” = 7). The scale demonstrated good reliability for Latino ( $\alpha = .90$ ) and Anglo ( $\alpha = .86$ ) women (Overall:  $\alpha = .88$ ). In order to capture the potential deleterious effects of perceived discrimination on healthcare seeking behaviors without narrowly focusing on race/ethnicity (Williams, Neighbors, & Jackson, 2003), the scale was scored by using the participants’ most highly endorsed item, covering a variety of personal characteristics, as an indication of intensity of her discrimination based attribution for mistreatment.

### *Negative Emotions*

To assess the degree to which participants experienced negative emotions as a result of the mistreatment, they were first presented with the question stem “How much did you feel the following emotions towards the healthcare professional, as a result of the negative incident?”, and then were asked to rate the degree to which they experienced three emotions (i.e. anger, rage, and irritation) on a 7-point Likert scale (“not at all” = 1 to “very much” = 7). These items were extracted from a larger scale measuring emotional reactions. Through principal axis factor analysis with oblimin rotation, the negative

emotions scale was shown to represent a unique factor. The scale also demonstrated good reliability for Latino ( $\alpha = .80$ ) and Anglo ( $\alpha = .81$ ) women (Overall:  $\alpha = .80$ ).

### ***Continuity of Care***

Continuity of care was measured using two items. The first asked “As a result of this incident, did you go to a new health clinic?” The second item asked “As a result of this incident, did you change healthcare professionals?” Participants provided “Yes”, “No”, or “No, but I wanted to” responses to each item. Responses were then recoded to be dichotomous.

### ***Covariates***

Covariates were based on existing items used in previous research (Betancourt et al., 2010), and variables that were identified as relevant to the outcome behavior being measured. Additional items were included to assess relevant covariates such as participants’ age, income, education, insurance type, ethnic concordance with health professional, gender of health professional, choice in health professional and setting, survey language, country of birth, and social desirability.

### **Statistical Analyses**

All hypotheses were tested using structural equation modeling (SEM) in EQS (6.1) (Bentler, 2005) with the maximum likelihood method of estimation. Significant covariates were partitioned from the covariance matrix prior to SEM in order to maintain a simplified model without using up model degrees of freedom (*see* Kammeyer-Mueller

& Wanberg, 2003). Partitioning was achieved by saving the residuals from multiple regression analyses for continuous variables, and logistic regression analyses for dichotomous variables. Adequacy of fit was assessed using the nonsignificant  $\chi^2$  goodness-of-fit statistic, a ratio of less than 2.0 for the  $\chi^2/df$  ratio (Tabachnick & Fidell, 1996), a Comparative Fit Index (CFI) of .95 or greater, Root Mean Square Error of Approximation (RMSEA) of less than .05 would indicate close fit and less than .08 would represent acceptable fit (Browne & Cudeck, 1993), and a low Akaike Information Criteria (AIC) (Williams & Holahan, 1994) indicating improved model parsimony. Modifications to the hypothesized model, if employed, were performed based on results from the Lagrange Multiplier (LM) test in addition to theoretical considerations.

In order to test the moderating role of ethnicity in determining the strength of relationships between study variables, a multi-group test of invariance was also conducted. The test of invariance was performed in three steps following the establishment of baseline models for Latino and Anglo American women. First, separate baseline models were tested without constraints across ethnic groups, serving as the reference model, in order to establish configural invariance, which would suggest that the same items are indicators of the same factors for both ethnic groups. Second, factor loadings were constrained to be equal across ethnic groups, where a nonsignificant change in fit indicates measurement equivalence between groups. Therefore, if differences in structural paths occurred, they could be assumed to be due to actual differences between groups rather than measurement artifacts (van de Vijver & Leung, 1997). In the third step, all structural paths were constrained to be equal across ethnic groups. Similarly, significant decrement in fit compared to the reference model, as



indicated by a significant  $\Delta\chi^2$  or  $\Delta\text{CFI}$  of .01 or greater (Cheung & Rensvold, 2002), would suggest differences in the magnitude of relationships among study variables based on ethnicity. If decrement in fit was indicated, the LM Test of equality constraints was assessed for evidence of noninvariance. If it was determined that releasing equality constraints drastically improved model fit, based on LM  $\chi^2 \geq 5.0$  per *df*, then paths were considered noninvariant and released sequentially.

Descriptive statistics, assumption checking, measurement instrument evaluations, partitioning of significant covariates, and any additional statistical procedures were obtained and performed using SPSS 18.0.

## CHAPTER THREE

### RESULTS

#### Preliminary Analyses

Due to multi-stage stratified recruitment, the sample was well balanced between Latino and Anglo participants (Latino:  $n = 164$ ; Anglo:  $n = 171$ ). Of these, 225 women reported experiencing healthcare mistreatment and were included in the analyses. Cases were evaluated for missing values, and those with more than half of the items missing were excluded from the analyses. Differences between the omitted and retained samples were observed in regards to education ( $t(329) = 2.69, p = .008$ ) in which the retained sample reported higher levels of education ( $M = 12.91, SD = 3.46$ ) compared to the omitted participants ( $M = 11.80, SD = 3.81$ ). Additionally, Latinos who completed the instrument in Spanish (24.4%,  $n = 40$ ) were more likely to be omitted than those who completed it in English (14.0%,  $n = 23$ ;  $\chi^2(1) = 6.79, p < .01$ ), and Anglos who reported that they did not experience mistreatment were significantly older than those who noted experiences of mistreatment ( $t(65.39) = 2.344, p = .02$ ). After imputing values for 26 cases using the expectation-maximization algorithm, data from 217 (101 Latino; 116 Anglo) women were available for analyses.

Although multi-stage stratified sampling led to representation of Latino and Anglo women across all levels of income, education, and age, the distribution of women within these categories was not equal, although improved upon previous research utilizing similar methods (Flynn, Betancourt, & Ormseth, 2011). In this study, the Latino sample had fewer years of education. As expected, they were more likely to have been born outside the USA and complete the Spanish version of instrument (*see* Table 1).

**Table 1***Sample demographics by ethnicity*

| Variable                                | Experienced Mistreatment    |                            | No Experienced Mistreatment |                           |
|---|-----------------------------|----------------------------|-----------------------------|---------------------------|
|   | Latino<br>( <i>n</i> = 101) | Anglo<br>( <i>n</i> = 116) | Latino<br>( <i>n</i> = 51)  | Anglo<br>( <i>n</i> = 44) |
|   | <i>M</i> (SD)               | <i>M</i> (SD)              | <i>M</i> (SD)               | <i>M</i> (SD)             |
| Education <sup>c,d</sup>                | 11.59 (3.83)                | 14.09 (2.59)               | 10.88 (4.5)                 | 13.40 (2.31)              |
| Age in years <sup>a,d</sup>             | 46.56 (13.25)               | 48.32 (16.50)              | 43.67 (15.56)               | 56.39 (15.56)             |
|   | <i>n</i> (%)                | <i>n</i> (%)               |                             |                           |
| Income                                  |                             |                            |                             |                           |
| ≤ \$14,999                              | 26 (25.7)                   | 30 (25.9)                  | 15 (29.4)                   | 20 (45.5)                 |
| \$15-24,999                             | 22 (21.8)                   | 22 (19.0)                  | 13 (25.5)                   | 9 (20.5)                  |
| \$25-39,999                             | 18 (17.8)                   | 20 (17.2)                  | 7 (13.7)                    | 2 (4.5)                   |
| \$40-59,999                             | 14 (13.9)                   | 17 (14.7)                  | 8 (15.7)                    | 5 (11.4)                  |
| \$60-79,999                             | 7 (6.9)                     | 14 (12.1)                  | 1 (2.0)                     | 3 (6.8)                   |
| \$80-100,000                            | 8 (7.9)                     | 3 (2.6)                    | 2 (3.9)                     | 1 (2.3)                   |
| >\$100,000                              | 6 (5.9)                     | 10 (8.6)                   | 3 (5.9)                     | 2 (4.5)                   |
| Not Specified                           |                             |                            | 2 (3.9)                     | 2 (4.5)                   |
| Marital Status <sup>a,c,d</sup>         |                             |                            |                             |                           |
| Single                                  | 13 (12.9)                   | 25 (21.6)                  | 7 (13.7)                    | 6 (14.0)                  |
| Married                                 | 56 (55.4)                   | 44 (37.9)                  | 23 (45.1)                   | 12 (27.9)                 |
| Cohabiting                              | 5 (5.0)                     | 7 (6.0)                    | 2 (3.9)                     | 2 (4.7)                   |
| Divorced                                | 10 (9.9)                    | 25 (21.6)                  | 13 (25.5)                   | 7 (16.3)                  |
| Widowed                                 | 9 (8.9)                     | 7 (6.0)                    | 3 (5.9)                     | 14 (32.6)                 |
| Not specified                           | 8 (7.9)                     | 8 (6.9)                    | 3 (5.9)                     | 2 (4.7)                   |
| Place of birth <sup>c, d</sup>          |                             |                            |                             |                           |
| Mexico                                  | 44 (43.6)                   | 0 (0.0)                    | 28 (54.9)                   | 0 (0.0)                   |
| Europe                                  | 0 (0.0)                     | 1 (0.9)                    | 0 (0.0)                     | 0 (0.0)                   |
| Not specified                           | 14 (13.9)                   | 0 (0.0)                    | 0 (0.0)                     | 0 (0.0)                   |
| USA                                     | 43 (42.6)                   | 113 (97.4)                 | 23 (45.1)                   | 44 (100.0)                |
| Spanish survey language <sup>c,d</sup>  | 58 (57.4)                   | 0 (0.0)                    | 33 (64.7)                   | 0 (0.0)                   |
| Health insurance coverage <sup>d</sup>  | 73 (72.3)                   | 96 (82.8)                  | 30 (62.5)                   | 39 (90.7)                 |
| Usual source of care <sup>d</sup>       | 77 (76.2)                   | 95 (81.9)                  | 35 (72.9)                   | 39 (90.7)                 |
| Ever diagnosed with Cancer <sup>c</sup> | 7 (6.9)                     | 22 (18.9)                  | 2 (4.0)                     | 7 (15.9)                  |

Note: <sup>a</sup> significant differences/associations between/across Anglos.

<sup>b</sup> significant differences/associations between/across Latinos.

<sup>c</sup> significant differences/associations within 'Experienced Mistreatment'.

<sup>d</sup> significant differences/associations within 'No Experienced Mistreatment'.

### **Analysis of Covariates**

Relevant covariates were analyzed for significant relationships with the study variables using Pearson product-moment correlations. When a significant relationship was found with a covariate, the variance explained by that variable was partitioned from every study variable. In these analyses, each covariate was found to be significantly related to at least one study variable (*see* Table 2), therefore, the variance explained by all covariates were partitioned from the indicators prior to SEM. Notably, even though some covariates related to particular characteristics in the discrimination items, partitioning was also employed for the *discrimination based attributions for mistreatment* variable as the focus of the study was on the effects of discrimination based attributions as a psychological variable beyond what might be related to actual characteristics of the patient.

### **Descriptive Statistics and Correlations**

Means and standard deviations for individual discrimination based attributions items are displayed in Table 3. Latinos reported significantly higher levels of agreement with attributions of discrimination due to “race/ethnic background” ( $t(160.83) = 3.669, p < .001$ ) and “how well [one] speaks English” ( $t(134.97) = 4.15, p < .001$ ) compared to Anglos. Other item comparisons were non-significant.

Table 2

*Intercorrelations with covariates, means and standard deviations as a function of ethnicity*

|                                   | Age               | Education          | Income             | Insured            | Female health provider             | Choice in health provider         | Ethnic concordance | Public or private hospital        | Soc. desirability              | Foreign born   | English survey |
|-----------------------------------|-------------------|--------------------|--------------------|--------------------|------------------------------------|-----------------------------------|--------------------|-----------------------------------|--------------------------------|----------------|----------------|
| 1. Cumulative Mistx Exposure      | .139<br>(.113)    | -.183<br>(-.152)   | -.129<br>(-.160)   | -.167<br>(-.168)   | -.052<br>(-.297**)                 | -.262**<br>(-.230*)               | .281**<br>(.074)   | -.040<br>(-.160)                  | -.099<br>(-.055)               | -.155<br>(-)   | .201*<br>(-)   |
| 2. Attributions of discrimination | -.046<br>(-.193*) | -.236*<br>(-.192*) | -.292**<br>(-.101) | -.212*<br>(-.202*) | -.106<br>(-.267**)                 | -.283**<br>(-.316**)              | .141<br>(-.072)    | -.224*<br>(-.184*)                | .063<br>(-.126)                | -.279**<br>(-) | .301**<br>(-)  |
| 3. Negative emotions scale        | .082<br>(-.038)   | .052<br>(-.103)    | .058<br>(-.071)    | -.101<br>(-.171)   | <b>-.021</b><br>( <b>-.313**</b> ) | .021<br>(-.189*)                  | .235*<br>(.097)    | <b>.020</b><br>( <b>-.247**</b> ) | -.162<br>(-.027)               | .002<br>(-)    | -.060<br>(-)   |
| 4. Anger                          | .045<br>(.070)    | .006<br>(-.097)    | .042<br>(-.044)    | -.171<br>(-.072)   | -.055<br>(-.273**)                 | .023<br>(-.071)                   | .120<br>(.137)     | .006<br>(-.151)                   | -.066<br>(.007)                | -.040<br>(-)   | .022<br>(-)    |
| 5. Rage                           | .074<br>(-.062)   | -.057<br>(-.220*)  | -.109<br>(-.175)   | -.048<br>(-.181)   | -.055<br>(-.255**)                 | -.161<br>(-.178)                  | .346***<br>(.112)  | -.054<br>(-.302**)                | -.079<br>(.025)                | -.107<br>(-)   | .075<br>(-)    |
| 6. Irritation                     | .088<br>(-.111)   | .173<br>(.047)     | .199*<br>(.031)    | -.036<br>(-.190*)  | .052<br>(-.277**)                  | <b>.174</b><br>( <b>-.241**</b> ) | .142<br>(.000)     | <b>.093</b><br>( <b>-.187*</b> )  | -.258**<br>(-.101)             | .140<br>(-)    | -.236*<br>(-)  |
| 7. Continuity of care             | .012<br>(-.096)   | .046<br>(.197*)    | .053<br>(.141)     | .360***<br>(.202*) | .250*<br>(.256**)                  | .130<br>(.310**)                  | .029<br>(.044)     | .192<br>(.146)                    | -.149<br>(.027)                | .054<br>(-)    | -.094<br>(-)   |
| 8. Changed clinic                 | .011<br>(-.105)   | .041<br>(.164)     | .055<br>(.111)     | .380***<br>(.183*) | .247*<br>(.230*)                   | .116<br>(.290**)                  | .014<br>(.000)     | .204*<br>(.176)                   | -.151<br>(.040)                | .046<br>(-)    | -.075<br>(-)   |
| 9. Change health Professional     | .012<br>(-.074)   | .045<br>(.207*)    | .045<br>(.153)     | .300**<br>(.197*)  | .226*<br>(.250**)                  | .130<br>(.292**)                  | .042<br>(.082)     | .159<br>(.099)                    | -.131<br>(.010)                | .057<br>(-)    | -.104<br>(-)   |
| <i>M</i>                          | 46.56<br>(48.32)  | 11.49<br>(14.09)   | 3.02<br>(3.10)     | .72<br>(.83)       | .49<br>(.39)                       | 2.27<br>(2.28)                    | .18<br>(.59)       | .63<br>(.81)                      | <b>8.95</b><br>( <b>7.03</b> ) | .43<br>(-)     | .43<br>(-)     |
| <i>SD</i>                         | 13.25<br>(16.50)  | 3.83<br>(2.60)     | 1.83<br>(1.87)     | .45<br>(.38)       | .50<br>(.49)                       | 1.18<br>(1.26)                    | .38<br>(.49)       | .48<br>(.39)                      | 2.71<br>(2.82)                 | .50<br>(-)     | .50<br>(-)     |

Intercorrelations, means, and standard deviations for Latino participants ( $n = 101$ ) are presented in upper portion of cell, and values in parentheses represent Anglo participants ( $n = 116$ ). Boldface indicates that groups differ significantly at  $p < .05$

\* $p < 0.05$ ; \*\* $p < 0.01$ ; \*\*\* $p < 0.001$

Table 3

*Means, standard deviations, and significance of differences of Attributions to Discrimination items*

| <b>Items</b>                 | Latino<br><i>M (SD)</i> | Anglo<br><i>M (SD)</i> | <i>p</i> -value  |
|------------------------------|-------------------------|------------------------|------------------|
| 1. My health condition       | 2.08 (1.73)             | 2.32 (2.09)            | .36              |
| 2. My education              | 1.90 (1.57)             | 1.59 (1.35)            | .12              |
| 3. Type of health insurance  | 2.90 (2.30)             | 2.34 (2.11)            | .06 <sup>†</sup> |
| 4. My gender                 | 1.98 (1.75)             | 2.15 (1.98)            | .52              |
| 5. How much money I have     | 1.99 (1.73)             | 2.04 (1.97)            | .83              |
| 6. My age                    | 2.10 (1.82)             | 2.10 (1.96)            | .99              |
| 7. My weight                 | 1.83 (1.42)             | 2.09 (1.87)            | .26              |
| 8. My race/ethnic background | 2.27 (1.97)             | 1.44 (1.20)            | <b>&lt; .001</b> |
| 9. How well I speak English  | 2.15 (1.97)             | 1.27 (0.89)            | <b>&lt; .001</b> |
| 10. My sexual history        | 1.82 (1.72)             | 1.53 (1.37)            | .18              |

Note: Significant bolded, † indicates trend

Table 4 includes the means and standard deviations for study variables after partitioning out the influence of covariates. Anglo women were found to score significantly higher on the overall negative emotions scale ( $t(215) = 2.10, p = .04$ ), and on the irritation item specifically ( $t(215) = 3.35, p = .001$ ). Table 4 also reports the correlations among study variables after partitioning of the covariates noted above. Fischer's  $r$ -to- $z$  test of difference revealed several significantly different correlations based on ethnicity, further confirming the need to conduct a test of invariance.

### **Structural Equation Modeling**

#### ***Test of the Hypothesized Model***

Prior to conducting a test of the structural model for Latino and Anglo samples, data screening revealed no violation of multivariate normality, therefore, standard test

Table 4

*Intercorrelations, means and standard deviations as a function of ethnicity after partitioning covariates*

|                                   | 1                            | 2                     | 3                              | 4                      | 5                     | 6                              | 7                    | 8                    | 9            |
|-----------------------------------|------------------------------|-----------------------|--------------------------------|------------------------|-----------------------|--------------------------------|----------------------|----------------------|--------------|
| 1. Cumulative Mistx Exposure      | —                            |                       |                                |                        |                       |                                |                      |                      |              |
| 2. Attributions of discrimination | <b>.298**</b><br>(.552***)   | —                     |                                |                        |                       |                                |                      |                      |              |
| 3. Negative emotions scale        | <b>.150</b><br>(.412***)     | .407***<br>(.502***)  | —                              |                        |                       |                                |                      |                      |              |
| 4. Anger                          | .135<br>(.367***)            | .368***<br>(.447***)  | .897***<br>(.898***)           | —                      |                       |                                |                      |                      |              |
| 5. Rage                           | <b>.119</b><br>(.373***)     | .427***<br>(.446***)  | .802***<br>(.793***)           | .584***<br>(.565***)   | —                     |                                |                      |                      |              |
| 6. Irritation                     | .130<br>(.311**)             | .256*<br>(.388***)    | .861***<br>(.858***)           | .691***<br>(.699***)   | .504***<br>(.486***)  | —                              |                      |                      |              |
| 7. Continuity of care             | <b>-.271**</b><br>(-.504***) | -.330**<br>(-.465***) | -.340**<br>(-.436***)          | -.348***<br>(-.366***) | -.254*<br>(-.320***)  | -.263**<br>(-.426***)          | —                    |                      |              |
| 8. Changed clinic                 | -.284**<br>(-.465***)        | -.286**<br>(-.468***) | -.225*<br>(-.359***)           | -.234*<br>(-.298**)    | -.189<br>(-.258**)    | -.153<br>(-.360***)            | .919***<br>(.930***) | —                    |              |
| 9. Change health professional     | <b>-.198*</b><br>(-.474***)  | -.312**<br>(-.400***) | -.372***<br>(-.462***)         | -.371***<br>(-.390***) | -.258**<br>(-.343***) | -.318**<br>(-.444***)          | .935***<br>(.928***) | .727***<br>(.729***) | —            |
| <i>M</i>                          | 8.43<br>(9.30)               | 3.98<br>(3.56)        | <b>3.35</b><br>( <b>3.88</b> ) | 3.80<br>(4.34)         | 2.45<br>(2.48)        | <b>3.40</b><br>( <b>4.81</b> ) | .94<br>(.97)         | .49<br>(.50)         | .46<br>(.47) |
| <i>SD</i>                         | 5.90<br>(6.57)               | 2.24<br>(2.13)        | 1.76<br>(1.68)                 | 2.19<br>(2.11)         | 1.92<br>(1.86)        | 2.07<br>(1.94)                 | .83<br>(.85)         | .43<br>(.46)         | .45<br>(.46) |

Intercorrelations, means, and standard deviations for Latino participants ( $n = 101$ ) are presented in upper portion of cell, and values in parentheses represent Anglo participants ( $n = 116$ ). Boldface indicates that groups differ significantly at  $p < .05$

\* $p < 0.05$ ; \*\* $p < 0.01$ ; \*\*\* $p < 0.001$

statistics were used to evaluate model fit. The hypothesized model for Latino (CFI = .983,  $\chi^2$  (10,  $n$  = 101) = 13.73,  $p$  = .19,  $\chi^2/df$  = 1.37, AIC = -6.27, RMSEA = .061, 90% CI (.00, .13)) and Anglo women (CFI = .985,  $\chi^2$  (10,  $n$  = 116) = 15.00,  $p$  = .13,  $\chi^2/df$  = 1.50, AIC = -5.00, RMSEA = .066, 90% CI (.00, .13)) fit the data well. The factor structure, as well as the directions and significance of the factor loadings, appeared similar for both groups. However, some differences in magnitude and significance of the associations between factors indicated the need for comparison and were further examined through multiple group analyses (Figure 2).

#### ***Test of Configural Invariance (Model 1)***

In order to test measurement equivalence, configural invariance first needed to be established. Therefore, the factor structure of the baseline model was tested without constraints in order to establish equality across ethnic groups. The requirement for configural invariance suggests that the same items must be indicators of the same factor for Latinos and Anglos, permitting differences in factor loadings across groups (Byrne, 2006). As shown in Table 5, the fit indices revealed an excellent fit to the data, therefore, configural invariance was upheld.

#### ***Test of Measurement Invariance (Model 2)***

Measurement equivalence was tested by constraining the factor loadings of the baseline model to be equal across groups. By constraining factor loadings, the coefficients were made invariant between Latinos and Anglos. The fit of the constrained measurement model was also good (Table 5), indicating that constraining factor loadings



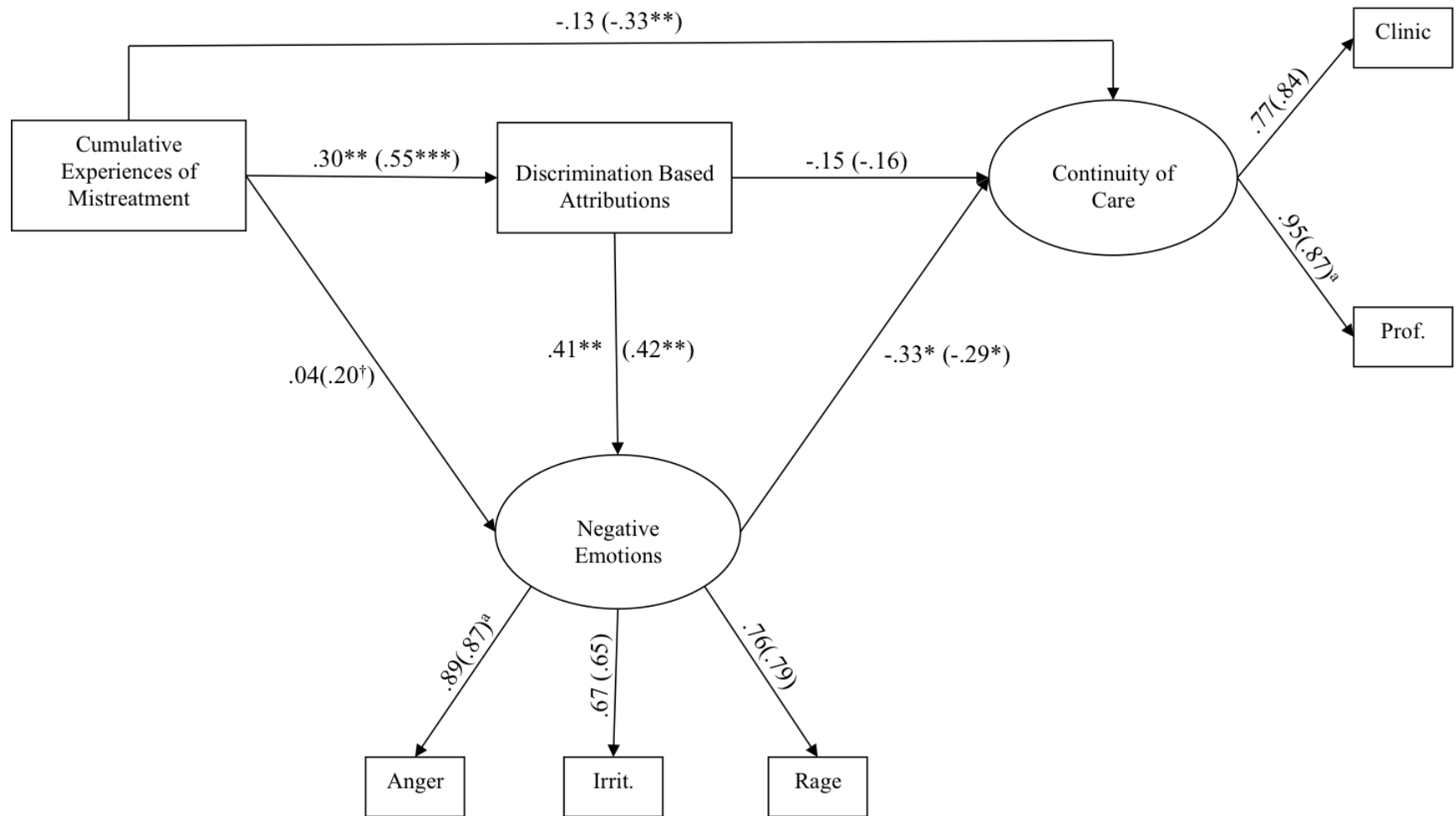


Figure 2 Discrimination based attributions, negative emotions, and continuity of care for Anglo and Latino women.

Anglo: CFI = .985,  $\chi^2$  (10,  $n$  = 116) = 15.00,  $p$  = .13,  $\chi^2/df$  = 1.50, SRMR = .04, RMSEA = .066, 90% CI (.00, .13)

Latino: CFI = .983,  $\chi^2$  (10,  $n$  = 101) = 13.73,  $p$  = .19,  $\chi^2/df$  = 1.37, SRMR = .04, RMSEA = .061, 90% CI (.00, .13)

<sup>†</sup> $p$  < .10, \* $p$  < .05, \*\* $p$  < .01, \*\*\* $p$  < .001

Table 5

*Model summary for tests of configural, measurement, and structural invariance across ethnicity*

| Model  | $\chi^2$ | <i>df</i> | CFI  | RMSEA | RMSEA<br>90% CI | $\Delta \chi^2$ | $\Delta df$ | $\Delta CFI$ |
|--|----------|-----------|------|-------|-----------------|-----------------|-------------|--------------|
| Model 1 Configural<br>No constraints   | 28.72    | 20        | .984 | .045  | .000, .079      | -----           | -----       | -----        |
| Model 2 Measurement Model<br>(factor loadings constrained across ethnicity)      | 29.55    | 23        | .988 | .036  | .000, .070      | 0.83            | 3           | .004         |
| Model 3 Structural Model<br>(constrained factor loadings and 6 structural paths) | 34.43    | 29        | .990 | .030  | .000, .062      | 5.71            | 9           | .006         |

\* $p = .05$ ; † $p = .10$ .

did not result in a significant decrement of model fit. Additionally, the LM test of equality constraints statistics indicated no significant between-group differences in the paths of the measurement model, confirming that the measurement model operated similarly for both Latinos and Anglos. As such, any observed group variations in the multi-group model could be interpreted as cross-cultural differences rather than the result of measurement artifacts (Chen, 2008).

### *Test of Structural Invariance (Model 3)*

In order to test for differences in the magnitude of paths among the study variables across ethnicity, constraints were imposed on all structural paths. Similarly, no decrement of fit was observed in the constrained model compared to the configural model (Table 5), suggesting that the effect of any one variable on another variable did not differ as a function of ethnicity. Furthermore, a review of the LM test of equality constraints statistics did not indicate an improvement in fit if any particular path constraint were released. However, failure to observe between-group differences may have been a function of insufficient power to detect differences due to smaller sample-size, rather than suggesting the absence of between-group differences (Qureshi & Compeau, 2009).

### *Test of Research Hypotheses*

The proposed structure of the model in which the influence of discrimination based attributions on continuity of care would act both directly and indirectly through negative emotions, explained the data well for both Latino and Anglo women. Moreover, the results upheld the expectation that attributions of discrimination would negatively

influence continuity of care through these pathways. Although ethnicity was not found to significantly impact the magnitudes of structural paths when comparing both models, there was some indication of differences based on ethnicity given the observable differences in significant pathways between study variables.

The first hypothesis regarding the explanatory role of discrimination based attributions in relation to cumulative exposure to mistreatment and negative emotions was confirmed for both Latino and Anglo women, although the findings were somewhat stronger for Latinos. For both groups, significant direct effects from experienced mistreatment on discrimination based attributions (Latinos:  $\beta = .30, p = .001$ ; Anglos:  $\beta = .55, p < .001$ ), and from discrimination based attributions on negative emotions (Latinos:  $\beta = .41, p < .001$ ; Anglos:  $\beta = .42, p < .001$ ) were observed. Additionally, the direct effect of cumulative exposure to mistreatment on negative emotions was non-significant for both groups although the path was trending toward significance for Anglos ( $\beta = .20, p = .055$ ). Moreover, cumulative exposure to mistreatment was found to significantly influence negative emotions indirectly through discrimination based attributions for both ethnic groups (Latinos:  $\beta_{\text{indirect}} = .12, p < .001$ ; Anglos:  $\beta_{\text{indirect}} = .23, p < .001$ ), highlighting the explanatory value that discrimination based attributions of healthcare mistreatment have in explaining related negative emotions.

The second hypothesis concerning the negative effects of discrimination based attributions on continuity of care both directly and indirectly through negative emotions was also confirmed. For both ethnic groups, there was a direct negative, although non-significant, effect of discrimination based attributions on continuity of care (Latinos:  $p = .09$ ; Anglos:  $p = .07$ ) based on the hypothesized structure of the model. Similarly,

significant positive effects were observed from discrimination based attributions on negative emotions, as described above, and significant negative effects were observed from negative emotions on continuity of care for both groups (Latinos:  $\beta = -.33, p = .006$ ; Anglos:  $\beta = -.29, p = .007$ ). Significant indirect influence of discrimination based attributions on continuity of care through negative emotions was also observed for both groups (Latinos:  $\beta_{\text{indirect}} = -.14, p = .02$ ; Anglos:  $\beta_{\text{indirect}} = -.12, p = .02$ ).

The third hypothesis, which predicted that the role of attribution-emotion processes on continuity of care would be moderated by ethnicity, was not confirmed. The test of invariance did not reveal any differences in the magnitude of the structural paths between Latino and Anglo women. However, there were some pathways that were found to be significant or trending toward significance for Anglos but not Latinos, although the test of invariance did not reveal significant differences in these effects. For example, the negative direct path from experienced mistreatment to continuity of care was only significant for the Anglo sample (Anglos:  $\beta = -.33, p < .001$ ; Latinos:  $\beta = -.13, p = .10$ ). Additionally, as mentioned above, the direct path from cumulative exposure to mistreatment to negative emotions was found to trend toward significance for Anglo but not Latino women. Specifically related to the attribution-emotion aspects of the model, the effects were remarkably similar for both ethnic groups.

### **Post-Hoc Analyses**

After identifying the significant influence that discrimination based attributions had in predicting emotion *and* behavior, post-hoc analyses were conducted in order to identify the influence of specific personal characteristics that patients attributed

discrimination to. The results were investigated in order to identify which specific attributions contributed most strongly to the overall discrimination measure used in the previously discussed models. Two additional hypotheses were tested in order to address this concern. First, it was hypothesized that some specific discrimination based attributions would significantly predict the overall measure of discrimination whereas others would not. Second, it was hypothesized that there would be differences in the specific characteristics that explained discrimination based attributions for Latinos compared to those that explained discrimination based attributions for Anglos.

In order to test these hypotheses, two multiple regression analyses were performed in which the discrimination based attributions scores were regressed onto the ten specific discrimination items that the original score was drawn from, addressing various personal characteristics of the patient (i.e. health condition, education, health insurance, gender, money, age, weight, race/ethnicity, English fluency, and sexual history) which indicated what particular items explained the scores utilized in the previous analyses the most. Participants who rated every item 1, or ‘strongly disagree’, out of 7 were excluded from the analyses in order to minimize distribution skew and to isolate the effects of those participants that perceived discrimination. Similar to previous analyses, the influence of relevant covariates was partitioned from the study variables to maintain focus on discrimination not related to the actual presence of the item characteristics.

As expected, both models were found to be significantly predictive (Latino:  $R^2 = .58$ ,  $F(10, 66) = 7.72$ ,  $p < .001$ ; Anglo:  $R^2 = .53$ ,  $F(10, 69) = 11.59$ ,  $p < .001$ ). Some predictors were found to influence the outcome far more than others for both ethnic

groups. Interestingly, the significant predictors were also found to differ by ethnicity (*see* Table 6). For Latinos, attributing discrimination to one's health condition ( $\beta = .28, t = 2.329, p = .02$ ), type of health insurance ( $\beta = .64, t = 5.819, p < .001$ ), age ( $\beta = .65, t = 5.212, p < .001$ ), weight ( $\beta = -.32, t = 2.202, p = .03$ ), and race/ethnicity ( $\beta = .30, t = 2.24, p = .03$ ) were found to significantly contribute to the discrimination high score. For Anglos, attributing discrimination to one's weight ( $\beta = .27, t = 2.604, p = .01$ ), gender ( $\beta = .32, t = 3.015, p = .004$ ), and English fluency ( $\beta = -.52, t = 2.810, p = .007$ ) were found to be significantly predictive for Anglos. Notably, although attributions of discrimination to one's weight were found to be significantly predictive for both Anglos and Latinos, the effect varied. For Anglos, increases in attributions of discrimination to weight contributed positively to the overall measure, increases in this specific attribution decreased the overall measure for Latinos. Variations were also apparent in the differences in predictive contributions to each model by ethnicity. For example, the two most influential discrimination based attributions for Latinos were due to type of health insurance and age, accounting for 38% and 33% of the total variance in attributions of discrimination respectively. For Anglos, gender and English fluency were most influential and only accounted for 13% and 12% of total variance (*see* Table 6).

Table 6

*Summary of multiple regression analyses investigating influential attributions of discrimination*

| Predictor        | Latino ( <i>n</i> = 67) |                 |                        |                        | Anglo ( <i>n</i> = 70) |                |                        |                        |
|------------------|-------------------------|-----------------|------------------------|------------------------|------------------------|----------------|------------------------|------------------------|
|                  | $\beta$                 | <i>p</i>        | <i>Sr</i> <sup>2</sup> | <i>Pr</i> <sup>2</sup> | $\beta$                | <i>p</i>       | <i>Sr</i> <sup>2</sup> | <i>Pr</i> <sup>2</sup> |
| Health Condition | <b>.28</b>              | <b>.02</b>      | <b>.09</b>             | <b>.04</b>             | .21                    | .08            | .05                    | .03                    |
| Education        | -.17                    | .16             | .04                    | .02                    | -.04                   | .77            | .00                    | .00                    |
| Health Insurance | <b>.64</b>              | <b>&lt;.001</b> | <b>.38</b>             | <b>.25</b>             | .17                    | .25            | .02                    | .01                    |
| Gender           | -.08                    | .51             | .01                    | .00                    | <b>.32</b>             | <b>&lt;.01</b> | <b>.13</b>             | <b>.07</b>             |
| Money            | -.08                    | .52             | .01                    | .00                    | .01                    | .94            | .00                    | .00                    |
| Age              | <b>.65</b>              | <b>&lt;.001</b> | <b>.33</b>             | <b>.20</b>             | .20                    | .08            | .05                    | .03                    |
| Weight           | <b>-.32</b>             | <b>.03</b>      | <b>.08</b>             | <b>.04</b>             | <b>.27</b>             | <b>.01</b>     | <b>.10</b>             | <b>.05</b>             |
| Race/Ethnicity   | <b>.30</b>              | <b>.03</b>      | <b>.08</b>             | <b>.04</b>             | .33                    | .08            | .05                    | .03                    |
| English Fluency  | .06                     | .60             | .01                    | .00                    | <b>-.52</b>            | <b>&lt;.01</b> | <b>.12</b>             | <b>.06</b>             |
| Sexual History   | -.18                    | .22             | .03                    | .01                    | .13                    | .25            | .02                    | .01                    |

*Note:* Significant predictors are bolded to ease identification



## **CHAPTER FOUR**

### **DISCUSSION**

The overall research reveals the explanatory importance of psychological processes, such as attributions and emotion, in determining healthcare seeking behaviors. Moreover, the findings indicate the direct effect of discrimination based attributions on these behaviors, as well as the indirect effect through negative emotions. These findings also further demonstrate the utility and importance of integrative conceptual models that can guide the investigation of complex relations among the social psychological determinants of health behaviors within multicultural settings. Consistent with the conceptual model guiding the research, psychological processes were found to be more proximal determinants of behavior. Additionally, the suggestion of the potential moderating effect of ethnicity presents further conceptual as well as practical implications. However, these findings are divergent from the foundations of the conceptual model in that social structural influence was not simply included as a distal determinant, but was either removed prior to analysis in order to isolate the effects of psychological processes, or was tested for moderation as was the case with ethnicity. Specific findings regarding the role of cognitive processes in determining healthcare seeking behaviors serve to advance understandings of health behavior by utilizing this conceptual model.

As the structural relations specified by the model fit the data well for both ethnic groups, the results suggest similar effects of cognition and emotion regardless of ethnic background. Moreover, the indication of structural invariance further suggests that the specified relationships are far more similar than dissimilar, although the lack of

identifiable between group differences may be due to limitations of power due to sample size (Qureshi & Compeau, 2009). Even so, the observable differences in significant pathways between ethnicity indicate some important nuances in the specificity of effects on healthcare seeking behavior. Specifically, there appeared to be more diffuse effects on behavior for Anglos whereas the significant effects for Latinos were more well-defined as moving from cumulative exposure to mistreatment, through discrimination based attributions and negative emotions, onto continuity of care. For Anglos, there was also a significant direct effect from cumulative exposure to mistreatment on continuity of care as well as a direct effect from mistreatment to negative emotions that was approaching significance. Notably, the effects for both Latinos and Anglos were observed after partitioning relevant covariates, including certain social structural factors, which served to isolate the effects of cognitive and affective factors on continuity of care.

Even though results did not indicate specific moderating effects of ethnicity, the potential for those effects, as indicated by observable differences in path significance, highlight the importance of employing statistical techniques that take into account the role of ethnicity, rather than simply controlling for its effects, such as multi-group structural equation modeling. Without utilizing these techniques, the opportunity to describe the complexity of these relationships would not be recognized. There is a growing body of literature that further suggests the necessity of employing these techniques in that the influence of psychological processes on behavior may vary by ethnicity, suggesting the presence of cultural factors, motivated by population factors such as ethnicity, that alter how psychological processes manifest their effects on behavior.

The fact that the overall results identify the role of non-specific attributions of discrimination is consistent with some arguments for the importance of the general effect of discrimination regardless of the perceived target of that discrimination (Williams & Mohammad, 2009). However, there is some evidence that the effect of discrimination based attributions on outcomes differ depending on what personal characteristic (i.e. racial/ethnic versus non-racial/ethnic) one attributes the discrimination to (Chae, Lincoln, & Jackson, 2011). The post-hoc analyses sought to identify more clearly what specific discrimination based attributions contributed most to the overall discrimination measure, and how these contributions varied by ethnicity. The results provided some evidence that the specific characteristic that a patient attributes discrimination to has differential influence on discrimination based attributions in the context of healthcare seeking behaviors, furthering the need for research on both racial/ethnic and non-racial/ethnic discrimination based attributions.

It is of interest to note that the specific attributions of discrimination that were significant for Latinos differed from those that were identified for Anglos. In particular, attributing discrimination to the type of health insurance one has and one's age were of primary influence for Latinos whereas attributing discrimination to one's gender was of primary influence for Anglos. These findings not only indicate the importance for future research on the effects of specific, non-racial/ethnic, discrimination based attributions on health behavior, but also inform future policy perspectives that might help to mitigate specific attributions of discrimination and their contribution to disparities in healthcare seeking behavior. Of specific concern regarding the latter are the current health insurance

structure in the US and its implications particularly for Latino women in deterring continuity of care.

From an application perspective, the results also demonstrate the utility of situation specific measures of perceived discrimination, particularly in healthcare contexts when concerned about negative influences on patient-professional interactions. Discrimination based attributions, in this context, indicate the deleterious effect of negative healthcare interactions on healthcare seeking behaviors. As such, measurements like the one employed in this study provide specific understanding of the influence of discrimination based attributions in healthcare settings, something that is missed when utilizing more global measures of perceived discrimination.

According to Williams & Mohammad (2009) measuring attributions of discrimination based on both racial and non-racial factors may serve to capture more of the negative health effects of perceived unfairness as well as to reduce some of the measurement error that might occur when asking questions only about racial/ethnic discrimination. Additionally, by improving specificity of measurement, we might also improve specificity of intervention focus. Future research might employ similar measures, with slight modifications depending on context and behavior of interest, to a multitude of healthcare settings regarding many healthcare concerns in order to identify relevant concerns for patient-provider relationships. Comprehensive measurement of discrimination requires assessing its manifestation relevant to specific contexts (Williams & Mohammad, 2009). As highlighted by the current study, research measuring discrimination based attributions in healthcare contexts would be remiss if it did not include items related to insurance status for example.

Despite the significance of the study findings, some limitations of the research exist. First, the sample was comprised of Latinos in Southern California who tend to have Mexican cultural backgrounds. Because of this, Latinos from other regions of the country with different national origins may not present the same results. Additionally, the sample included both US and foreign born Latinos, potentially increasing variance within the Latino sample. Although the fit of the data to the conceptually sound integrative model guiding the purposed structure of relations contributes considerable strength to the significance of the results, the cross-sectional design of the research limits the test of temporal relations. Future research could employ longitudinal designs in order to test the temporal relations of these variables. Regarding the measurement of study variables, future research should employ measures of discrimination based attributions that assess the significance of attributing discrimination to particular personal characteristics over and above race/ethnicity. The findings of this study indicate that characteristics such as insurance status and age may be more influential than race/ethnicity particularly for Latinos.

The findings of this study have important implications for the study of culture in psychology and health as well as for the development of culturally sensitive interventions to improve continuity of cancer care among Anglo and Latino women. First, the results highlight the unique role that cognitive and emotional factors have in determining healthcare seeking behaviors, and how this influence might differ based on particular sources of culture such as ethnicity. As such, future research must account for sources of cultural variation and, preferably, relevant cultural values, beliefs, and norms.

This study also has important implications for interventions with culturally diverse patients. The results of the structural relationships of the study variables indicate the importance of focusing on those cognitive, and subsequent emotional, factors that undermine the patient-provider relationship in order to improve healthcare seeking behavior such as continuity of care. Additionally, the post-hoc findings suggest the particular influence of social structural factors (e.g. insurance) in affecting attributions of negative healthcare experiences for Latino women. In this way, these research findings suggest the potential for addressing health disparities in this behavioral arena from both individual psychological and policy driven perspectives. Given these considerations, efforts to address patients' discrimination based attributions of mistreatment by their healthcare provider, related negative emotions, and the structural sources that might inform those specific attributions, could all be relevant in reducing disparities in healthcare seeking behavior between Latino and Anglo women.

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## APPENDIX A

### CUMULATIVE EXPOSURE TO MISTREATMENT SCALE

Below are examples of negative experiences that some patients have with their health professionals. If the negative experience has NEVER happened to you during a mammogram, clinical breast exam, or Pap test, please check the first box. If it has happened to you, please mark how much it bothered you.

1. Did not listen to me.
2. Used words that I did not understand.
3. Did not perform the exam correctly.
4. Touched me inappropriately during the exam.
5. Did not pay attention to me.
6. Did not ask me any questions.
7. Did not give me a chance to say all of the things I wanted.
8. Did not provide me with enough information.
9. Was not totally honest with me.
10. Did not answer my questions.
11. Was not clear when explaining my test results.
12. Rushed or hurried when they treated me.
13. Was rough while performing the screening exam.
14. Started the examination without any introduction or conversation.
15. Did not respect my need for privacy.
16. Kept me waiting too long.
17. Jumped to conclusions about my health without having all of the details.

18. Did not treat me with respect.
19. Did not return my calls in the appropriate time.
20. Made offensive comments.
21. Did not explain what they were doing.
22. Treated me like an object.
23. Did not want me that the exam may be painful.
24. Was not very thorough and careful.

## **APPENDIX B**

### **DISCRIMINATION-BASED ATTRIBUTIONS SCALE**

Please think about WHY the health professional acted this way. Below is a list of 19 possible reasons for the negative experience with your professional. Please mark how much you agree or disagree with each. (1 = Strongly Disagree, 7 = Strongly Agree)

1. My health condition.
2. My education.
3. The type of health insurance I have or because I do not have insurance.
4. My gender.
5. How much money I have.
6. My age.
7. My weight.
8. My race or ethnic background.
9. How well I speak English.
10. My sexual history.

## APPENDIX C

### NEGATIVE EMOTIONS SCALE

How much did you feel the following emotions towards the healthcare professional,  
as a result of the negative incident? (1 = Not at all, 7 = Very Much)

1. Anger
2. Rage
3. Irritation