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Attributions for Interpersonal Healthcare Mistreatment and Continuity of Care

Daniel Joel Northington
Loma Linda University

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

Attributions for Interpersonal Healthcare Mistreatment and Continuity of Care

by

Daniel Joel Northington

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

December 2012

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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.

_____, Chairperson
Hector Betancourt, Professor of Psychology

Patricia Flynn, Adjunct Professor of Psychology

Jason Owen, Assistant Professor of Psychology

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ABBREVIATIONS

| | |
|--------------|---|
| α | Alpha |
| β | Standardized Path Coefficient (Beta) |
| CFI | Comparative Fit Index |
| CI | Confidence Interval |
| Δ | Delta (Change) |
| df | Degrees of Freedom |
| EM | Expectation-Maximization Estimation Process |
| IOM | Institute of Medicine |
| IRB | Institutional Review Board |
| LM | Lagrange Multiplier Test |
| MCAR | Little's Missing Completely at Random Test |
| ML | Maximum Likelihood Estimation |
| n | Number of Participants |
| p | Probability |
| r | Pearson's R (Correlation) |
| r^2 | Variance Explained |
| $S-B \chi^2$ | Satorra Bentler Scaled Statistic |
| SAES | Social Attribution and Emotion Scale |
| SEM | Structural Equation Modeling |
| RMSEA | Root Mean Square Error of Approximation |
| χ^2 | Chi-Squared |

ABSTRACT OF THE THESIS

Attributions for Interpersonal Healthcare Mistreatment and Continuity of Care

by

Daniel Joel Northington

Master of Arts, Graduate Program in Psychology
Loma Linda University, December 2012
Dr. Hector Betancourt, Chairperson

Although continuity of cancer-related care increases the use of early detection cancer screening exams (Doescher, Saver, Fiscella, & Franks, 2004), and thereby improves treatment outcomes (Mandelblatt et al., 2009), Latino (Latina) women in the U.S. currently report lower continuity of care than non-Latino White (Anglo) women (American Cancer Society, 2010; Doescher, Saver, Fiscella, & Franks, 2001). Such disparities may be due, in part, to interpersonal healthcare mistreatment (Smedley, Stith, & Nelson, 2003), as well as mistreatment-related attributions and emotions (Betancourt, Flynn, & Ormseth, 2011; Tucker, 2008). Therefore, according to Weiner's model of attribution and emotion (1986) as well as Betancourt's Integrative model of Culture, Psychological Processes, and Health Behavior (2009), the aim of this research was to examine the impact of mistreatment-related attributions of intentionality and controllability, as well as negative emotions, on continuity of care among Latino and Anglo women. Two hundred and fourteen Latino and Anglo women who perceived at least one instance of interpersonal healthcare mistreatment were recruited from Southern California using multi-stage stratified sampling. Structural equation modeling confirmed the expected relationships between attributions, negative emotions, and continuity of care, with ethnicity moderating these associations. For Anglos, higher attributions of

intentionality were associated with higher attributions of controllability, $r = .46, p < .001$, and were directly related to lower continuity of care, $\beta = -.38, p < .01$. For Latinos, higher attributions of controllability were indirectly related to lower continuity of care through mistreatment-related negative emotions, $\beta_{\text{indirect}} = -.12, p < .05$. These findings have implications for improving continuity of care in Latino American women, as well as educating healthcare professionals on how attributions and emotions related to patient-professional relationships can impact cancer-related health disparities.

CHAPTER ONE

INTRODUCTION

Continuity of care, defined by having a usual site of care and consistent access to a healthcare professional (Saultz, 2003), has been shown to increase the use of women's early detection cancer screening exams (O'Malley, Mandelblatt, Gold, Cagney, & Kerner, 1997). For instance, a study found that women with a regular physician and a regular site of care were approximately two times more likely to have recently received a clinical breast examination, mammogram, or Pap test at the appropriate interval compared to women without a usual physician or a site of care (O'Malley et al., 1997). This is an important finding since these screening exams can significantly improve treatment outcomes and lower cancer-related mortality rates when performed at recommended intervals (Kerlikowske, Grady, Rubin, Sandrock, & Ernster, 1995; Mandelblatt et al., 2009; National Cancer Institute, 2011).

However, despite the effectiveness of early detection exams, under-use of cancer women's screening services remains an ongoing concern for minority populations in the United States, especially for Latino women (Michaelson et al., 2002; Peek & Han, 2004; Smith, Cokkinides, Brooks, Saslow, & Brawley, 2010). For example, while 53% of Anglo American women in the United States over the age of 40 had a mammogram within the last year, only 42% of Latino American women over the age of 40 had a mammogram within the last year (American Cancer Society, 2010). These alarming statistics have prompted researchers to not only investigate the factors contributing to lower rates of cancer screening behaviors in general, but, more specifically, what factors contribute to lower rates of cancer screening in Latino women. In addition to existing

evidence on social-structural barriers to obtaining preventive services, such as income, education, and not having health insurance (Doescher et al., 2001; Goel et al., 2003; McAlearney, Reeves, Tatum, & Paskett, 2007), current cancer-related health disparities may also be influenced, in part, by aspects of patient-professional relationships, such as a patient's perception of healthcare mistreatment (Smedley et al., 2003), and mistreatment-related psychological processes (Betancourt et al., 2011).

This study will examine the impact of the attributions women make for perceived interpersonal healthcare mistreatment while receiving a routine cancer-screening exam on continuity of cancer-related care. Such attributional processes are expected to influence emotional reactions to mistreatment and, consequently, future interactions with healthcare providers (Flynn, Betancourt, & Ormseth, 2011). While previous research has already demonstrated the adverse influence of mistreatment on other aspects of health care, such as decreased patient satisfaction (Freed, Ellen, Irwin, & Millstein, 1998), lower levels of adherence to doctors' recommendations (Blanchard & Lurie, 2004), lower compliance with medical treatments (Perloff, Bonder, Ray, Ray, & Siminoff, 2006), and delays in filling prescriptions (Van Houtven et al., 2005), only a small number of recent studies have examined how perceptions of mistreatment influence continuity of cancer-related care from a cross-cultural perspective (Betancourt et al., 2011; Flynn et al., 2011; Tucker, 2008). Because an increasing amount of research evidence suggests that minority populations report lower levels of continuity of care than their Anglo American counterparts (Doescher et al., 2001), studies have started to examine how interpersonal processes involved in the clinical encounter differ between Latinos and Anglos.

For example, one recent study by Betancourt and colleagues (2011) found that perceptions of mistreatment influenced continuity of care directly for Anglo women, and indirectly for Latino women, through mistreatment-related anger. The findings of this study suggest that Latino and Anglo women experience perceptions of healthcare mistreatment differently, thus requiring an investigation of these potential differences. Such findings also demonstrate the importance of understanding the mechanisms by which healthcare mistreatment can interrupt continuity of care. Namely, because prior research already supports the claim that perceptions of interpersonal healthcare mistreatment can adversely impact Latino women's continuity of cancer-related care through mistreatment-related emotions (Betancourt et al., 2011; Flynn et al., 2011; Tucker, 2008), research on cognitive (attributional) processes, as well as emotional processes, may shed more light on a woman's decision to change doctors or healthcare clinics.

Therefore, guided by Weiner's theory of attribution and emotion (Weiner, 1995), and Betancourt's integrative model of culture, psychological processes, and health behavior (Betancourt & Flynn, 2009), the aim of this study was to examine the impact of attributions of intentionality and controllability, as well as related emotional processes, on continuity of cancer-related care for Anglo and Latino women who perceived interpersonal healthcare mistreatment. Betancourt's integrative model of culture, psychological processes, and health behavior provides a theoretical framework to investigate health behavior in the context of our multicultural society. According to this model, psychological variables (such as cognitions and emotions), along with cultural factors and population categories, are important determinants of health behavior.

Weiner's theory of attribution and emotion is a model by which researchers can organize the cognitive and emotional linkage related to a person's perception of a negative event. Specifically, Weiner's theory specifies the role of attributions of intentionality and controllability (causality) concerning emotional experiences related to interpersonal behavioral phenomena.

Perceptions of Interpersonal Healthcare Mistreatment

According to the Institute of Medicine's report titled *Unequal Treatment* (Institute of Medicine, 2003), healthcare mistreatment can occur at two levels. First, mistreatment can occur at the healthcare system level since many people are restricted from accessing adequate healthcare due to insurance status or limitations in transportation. Second, mistreatment can also occur at the interpersonal level due to aspects of the patient-professional relationship, such as interpersonal communication, perceptions of bias, stereotyping, and cultural competency. According to the IOM, future research should focus on understanding the influence of factors within the patient-professional relationship and how these factors impact health care utilization (Smedley et al., 2003).

Perceived interpersonal healthcare mistreatment is a subjective phenomenon that differs from person to person regardless of racial or ethnic background (Kaiser & Major, 2006; Klassen, Smith, Shariff-Marco, & Juon, 2008). To this end, interpersonal nuances within the clinical encounter are assessed from the patient's perspective. This is especially important because healthcare policies and interventions in the United States remain primarily founded on Anglo American assumptions despite the fact that society is becoming increasingly diverse (Rossa, Dumka, Gonzales, & Knight, 2002). These

assumptions might ignore the influence of unique demographic, cultural, and psychological factors that could impact how one may perceive and respond to instances of interpersonal healthcare mistreatment.

It is also important to distinguish discrimination and stigma from perceived mistreatment. On the one hand, discrimination is defined as being treated differently because of one's race, ethnicity, sexual orientation, religious preference, etc. (Major & Vick, 2005), and stigma is defined as being a part of a social category or circumstance that leads to disadvantaged economic or interpersonal outcomes because of society's negative attitudes, beliefs, or stereotypes about a given group (Crocker & Major, 1989). On the other hand, perceived mistreatment, as conceptualized in this study, is the perception of not being treated properly, regardless of factors associated with discrimination or stigma. While these concepts can occur simultaneously within a given interpersonal interaction, they are not mutually inclusive. Mistreatment does not necessarily imply discrimination or stigmatization, but discrimination and stigma may imply mistreatment.

Weiner's Theory of Attribution and Emotion

Weiner's theory of attribution and emotion details the linkage between attributional and emotional factors that are involved when a person explains the causes of an outcome, event, or behavior (Weiner, 2008). Specifically, this current study will employ Weiner's interpersonal (rather than intrapersonal) understanding of attributions and emotions (Rudolph, Roesch, Greitemeyer, & Weiner, 2004) as it relates to negative interpersonal phenomenon. Such an approach is concerned with how one explains or

perceives negative events caused by other people (Weiner, 1995). Weiner's theory suggests that people make attributions of intentionality and controllability for the causes of someone's behavior, followed by negative emotions, and behavioral outcomes.

Attributions of controllability refer to the victim's cognitive appraisal of the perpetrator's ability to inhibit the actions that caused a given event, while attributions of intentionality refer to a victim's cognitive appraisal that a perpetrator "deliberately performed a socially inappropriate behavior, engaged in the conduct with foresight, and had knowledge of its consequences" (Weiner, 1995, p. 13). In fact, it is important to note that research comparing the influence of controllability versus intentionality suggests that intentionality is a greater predictor of negative emotions, and behavioral outcomes than controllability (Betancourt, 2004; Betancourt & Blair, 1992; Malle, Moses, & Baldwin, 2003). Weiner then suggests that these attributions will lead one to experience negative emotions, such as irritation, anger, or rage. Such negative emotions reflect an "accusation, or a value judgment, that follows from the belief that another person 'could and should have done otherwise'" (Weiner, 1995, p. 17). Finally, Weiner suggests that these attributions and negative emotions will shape one's subsequent behavior. In fact, a recent meta-analysis of the linkage between anger and behavior found 19 studies that provide strong support for anger as a mediating determinant of future behavior, with attributional factors influencing this emotional process (Rudolph et al., 2004). Such studies illustrate the combined influence of attributional and emotional processes on one's behavioral reaction to a negative event, such as the decision to maintain continuity with a particular healthcare provider or healthcare clinic after perceiving interpersonal healthcare mistreatment (Tucker, 2008). Numerous studies have applied Weiner's

theoretical framework to a variety of social situations, which have led to increasing support for Weiner's theory (Brewin, MacCarthy, Duda, & Vaughn, 1991; Farwell & Weiner, 2000; Millman, 1980; Rudolph et al., 2004; Weiner, 1988; Zucker & Weiner, 1993).

Betancourt's Integrative Model of Culture, Psychological Processes, and Health Behavior

Since research suggests mistreatment-related psychological processes are associated with socially shared cultural factors, such as fatalism or beliefs about healthcare professionals (Betancourt et al., 2011), this study employed Betancourt's Integrative Model of Culture, Psychological Processes, and Health Behavior (Betancourt & Flynn, 2009) (Figure 1) as a conceptual framework to guide this research. As such, this model suggests that psychological processes (column C), such as mistreatment-related attributions and emotions, are the most proximal determinants of health behaviors (column D), such as the utilization of cancer screening services. Population categories (column A) were also explored in this study by comparing how these processes differ for Latino and Anglo women.

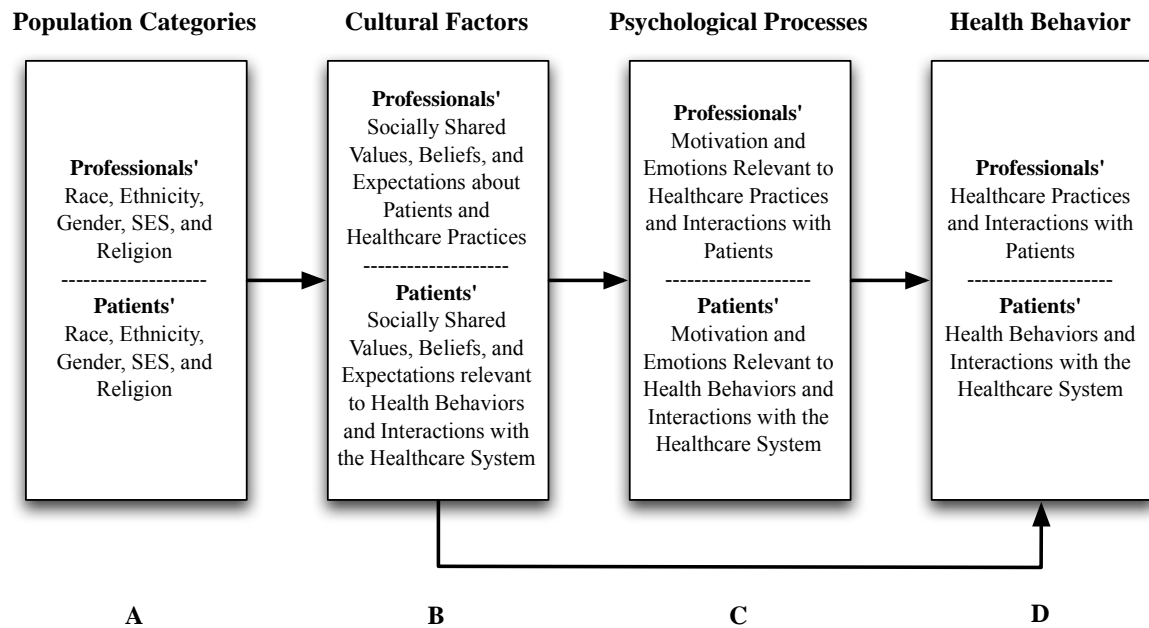


Figure 1. Betancourt’s integrative model adapted for the study of culture, psychological processes, and health behavior (Betancourt & Flynn, 2009).

Hypotheses

1. Perceived intentionality of interpersonal healthcare mistreatment and perceived controllability of the causes to which patients attribute interpersonal healthcare mistreatment are expected to influence continuity of cancer-related care directly, and indirectly, through the mediating effect of negative emotions.
2. Perceived intentionality of interpersonal healthcare mistreatment will have a greater influence on negative emotions and continuity of cancer-related care than perceived controllability for the causes of interpersonal healthcare mistreatment.
3. The relations among attributions, emotions, and continuity of cancer-related care will be moderated by ethnicity.

CHAPTER TWO

METHODS

This study used data from a larger research project funded by the American Cancer Society (PFT-08-014-01), which was designed to investigate the role of culture and psychological factors in cancer-related health care delivery among underserved Latinas.

Participants and Procedures

Multi-stage, stratified sampling was used to obtain similar proportions of Latino and Anglo women from various demographic backgrounds. Based on U.S. Census tract data from the Federal Financial Institutions Examination Council, demographic projections for ethnicity, education, income, and age were made for a number of recruitment settings including churches, markets, universities, mobile home parks, and community settings in Southern California. Once permission was obtained from the selected sites, a recruitment flyer in Spanish and/or English was posted that described the study, eligibility criteria, and the time and on-site location where interested women could go to participate.

University approval for the study was obtained from the Institutional Review Board (IRB) prior to data collection. Bilingual (Spanish-English) research assistants greeted the interested women at each research location, described the purpose of the study, and restated the eligibility criteria. The research assistants indicated that participants must be either Latino or Anglo American, at least 20 years old, and able to read either English or Spanish. After participants provided informed consent (see

Appendix B), they were administered either an English or Spanish version of the questionnaire. This instrument took approximately 30 to 45 minutes to complete, after which participants were compensated \$15 for their time.

After data was collected from each site, the distribution of participants across demographic categories was examined. Based on these findings, additional recruitment settings were identified, and flyers were posted advertising the need for participants from specific demographic backgrounds. As a result of this multi-stage stratified sampling, the final sample was well balanced between Latinos ($n = 164$) and Anglos ($n = 171$) for a combined sample of 335 women.

Measures

The instrument was developed using a cultural research approach to instrument development as set forth by Betancourt and colleagues (2010). This mixed-methods approach included three phases of measurement development in order to identify factors relevant to cancer-related healthcare delivery, such as types of interpersonal healthcare mistreatment. A 24-item mistreatment scale resulted from Betancourt's instrument development approach, which was used to identify participants who experienced at least one instance of interpersonal healthcare mistreatment. This scale included items related to privacy, lack of respect, communication, and rude behavior on the part of the healthcare professional performing the screening exam (see Appendix A). The questionnaire also included a variety of demographic items and previously developed scales, such as attributions, emotions, and continuity of cancer-related care.

Social Attribution and Emotions Scale

After participants indicated if they had experienced any of the 24 instances of mistreatment during a routine mammogram, clinical breast exam, or pap test, they were asked to choose the instance of mistreatment that bothered them the most. Participants were then asked to keep this most bothersome incident of mistreatment in mind as they completed Betancourt's *Social Attribution and Emotion Scale* (SAES).

The SAES was developed by Betancourt and colleagues based on his attribution-emotion model of conflict (e.g., Betancourt & Blair, 1992). Three subscales were developed to measure a participant's attributions of intentionality, controllability, and negative emotions related to their most distressing instance of interpersonal healthcare mistreatment. A sample item from the attributions of intentionality subscale includes, "Do you think the healthcare professional meant to treat you this way?" A sample item from the attributions of controllability subscale includes, "The event is something healthcare professional could have changed or influenced." Participants were asked to indicate the extent to which they agreed with 3 intentionality-related items and 3 controllability-related items, which were each placed on a 7-point Likert scale from "strongly disagree" to "strongly agree." Strong internal reliability was demonstrated for the attributions of intentionality subscale, Latinos: $\alpha = .89$, Anglos: $\alpha = .94$, as well as the attributions of controllability subscale, Latinos: $\alpha = .90$, Anglos: $\alpha = .94$. For the negative emotion subscale, participants responded to 3 items asking them how much irritation, anger, or rage they felt as a result of the negative incident. These emotion-related items were also placed on a 7-point Likert scale with anchors from "Not at all" to "Very

much.” This scale demonstrated adequate internal reliability for both Latinos, $\alpha = .80$, and Anglos, $\alpha = .81$.

Continuity of Cancer-Related Care Scale

A 2-item continuity of cancer-related care scale was used to measure whether participants (1) changed healthcare professionals or (2) changed healthcare clinics as a result of perceiving interpersonal healthcare mistreatment. For continuity of care with their healthcare professional, participants were asked, “As a result of this incident, did you change healthcare professionals (or do you plan to change healthcare professionals)?” For continuity of care with their healthcare clinic, participants were asked, “As a result of this incident, did you go to a new health clinic to receive your care (or do you plan to go to a new health clinic)?” Participants were provided with three response options for each item: “Yes,” “No,” and “No (I wanted to change, but had no other options).” Of these response options, “No (I wanted to change, but had no other options),” was coded as a “Yes” response since Weiner’s methodologies examine behavioral intentions as well as observable behaviors. This scale also demonstrated adequate internal reliability for both Latinos, $\alpha = .83$, and Anglos, $\alpha = .83$.

Covariates

Based on theoretical considerations, as well as previous research (Betancourt et al., 2011; Betancourt et al., 2010; Flynn et al., 2011), age, education, income, having health insurance, having access to a usual place of healthcare, choice in selecting one’s healthcare professional, gender of the healthcare professional, and patient-professional

ethnic concordance were examined as sources of potential variation. In addition, participants also responded to a 13-item social desirability scale (Crowne & Marlowe, 1960).

Statistical Analyses

Preliminary analyses were completed to assess the data for normality, skew/kurtosis, and multivariate outliers. Missing data was imputed using an expectation-maximization (EM) estimation process, and all hypotheses in this study were analyzed using the maximum likelihood method of estimation in Bentler's EQS for Windows, v.6.1. In addition, in order to maintain a parsimonious and model without using up degrees of freedom (Betancourt et al., 2010), variance from covariates found to significantly influence the research variables was partitioned from the correlation matrix (Table 2) prior to conducting structural equation modeling. Such partitioning controlled for the effects of these significant covariates on subsequent multi-group analyses in EQS.

Adequate model fit was evaluated based on a non-significant χ^2 , a χ^2/df ratio of less than 2.0 (Kammeyer-Mueller & Wanberg, 2003), a Comparative Fit Index (CFI) of .95 or greater (Tabachnick, Fidell, & Osterlind, 2001), and a Root Mean Square Error of Approximation (RMSEA) of less than .05, including the 90% confidence interval typically used in EQS (Bentler & Hu, 1999). Any modifications to the hypothesized model were based on results of the Lagrange multiplier (LM) test, the Wald χ^2 test, and theoretical considerations.

After separate baseline structural equation models were obtained for Latino and Anglo women, within-group structural equation modeling was conducted to test for

significant differences between structural paths in each ethnic group related to the greater influence of attributions of intentionality on negative emotions and continuity of care than attributions of controllability. The baseline model for each group, which allowed these structural paths of interest to be freely estimated, was compared against a constrained model in which structural paths of interest were set to be equal (Bollen, 1989). If the constrained structural model showed a decrement in fit based on a significant $\Delta\chi^2$ or ΔCFI of .01 or greater, as compared to the baseline model, paths were assumed to be statistically different (Bryant & Satorra, 2011).

Multi-group structural equation modeling, namely a test of invariance (Browne & Cudeck, 1993), was also conducted to test for significant differences between ethnic groups in the magnitude of the relations among study variables. First, since it is necessary in cross-cultural research to establish that differences observed between groups are not due to measurement artifacts (Byrne, 1995), measurement equivalence was examined (Table 4). Then, all structural paths were constrained to be equal. If the constrained structural model showed a decrement in fit based on a significant $\Delta\chi^2$ or ΔCFI of .01 or greater, as compared to the reference model, the LM Test of equality constraints was assessed for evidence of noninvariance (Van de Vijver & Leung, 1997). Equality constraints were considered noninvariant and released in a sequential manner if doing so would significantly improve model fit ($\text{LM } \chi^2 \geq 5.0 \text{ per } df$) (Cheung & Rensvold, 2002).

CHAPTER THREE

RESULTS

Preliminary Analyses

Of the original 335, 237 participants (113 Latino and 124 Anglo women) women reported at least one instance of perceived interpersonal healthcare mistreatment during a breast and/or cervical cancer screening exam and were therefore included in the analyses. Twenty three cases with missing values on more than half of the items on latent variables (multi-item subscales) were excluded from the analyses since they could not be reliably imputed. A missing value analysis and a Little's Missing Completely at Random (MCAR) test did not suggest a statistical deviation from randomness for either Latino ($p = .09$) or Anglo ($p = .73$) women. Consequently, scores for 14 participants were imputed using the expectation-maximization (EM) method, which resulted in a final sample of 214 Latino ($n = 100$) and Anglo ($n = 114$) women. There were no statistically significant differences in age, education, income, having health insurance, having access to a usual source of healthcare, choice in selecting one's healthcare professional, gender of the healthcare professional, and patient-professional ethnic concordance between the omitted sample and the retained sample.

While multi-stage stratified sampling resulted in Latino and Anglo women being represented across all demographic levels, Latino women were significantly different from Anglo women in that they had less education, $\chi^2(4) = 30.93, p < .001$, were less likely to have health insurance, $\chi^2(1) = 3.99, p < .05$, and were less likely to have experienced patient-provider ethnic concordance during their reported experience of interpersonal healthcare mistreatment, $\chi^2(1) = 35.06, p < .001$ (Table 1).

Table 1

Demographic characteristics for Latino (n = 100) and Anglo (n = 114) samples.

| | Latino (n = 100) | Anglo (n = 114) |
|--|------------------|-----------------|
| | n (%) | n (%) |
| Education* | | |
| Less than High School (< 12 Years) | 38 (38.0) | 10 (8.8) |
| High School (12 Years) | 20 (20.0) | 31 (27.2) |
| Some College (13-15 Years) | 22 (22.0) | 35 (30.7) |
| College (16 Years) | 16 (16.0) | 19 (16.7) |
| > 4 years College (\geq 17 Years) | 4 (4.0) | 19 (16.7) |
| Annual Household Income | | |
| \$0 - \$14,999 | 27 (27.0) | 30 (26.3) |
| \$15,000 - \$24,999 | 21 (21.0) | 20 (17.5) |
| \$25,000 - \$39,999 | 17 (17.0) | 20 (17.5) |
| \$40,000 - \$59,999 | 14 (14.0) | 17 (14.9) |
| \$60,000 - \$79,999 | 7 (7.0) | 14 (12.3) |
| \$80,000 - \$100,000 | 8 (8.0) | 3 (2.6) |
| \$100,000+ | 6 (6.0) | 10 (8.8) |
| Marital Status* | | |
| Single | 13 (13.0) | 24 (21.1) |
| Married | 56 (56.0) | 44 (38.6) |
| Cohabiting | 5 (5.0) | 7 (6.1) |
| Divorced or Separated | 10 (10.0) | 24 (21.1) |
| Widowed | 8 (8.0) | 7 (6.1) |
| Not Specified | 8 (8.0) | 8 (7.0) |
| Type of Health Insurance Coverage | | |
| Medicare | 20 (20.0) | 29 (25.4) |
| Medicaid | 4 (4.0) | 6 (5.3) |
| Other Public Insurance | 5 (5.0) | 9 (7.9) |
| Privately Purchased | 9 (9.0) | 9 (7.9) |
| Employment Based | 31 (31.0) | 39 (34.2) |
| HMO | 3 (3.0) | 3 (2.6) |
| Uninsured | 28 (28.0) | 19 (16.6) |
| Born in the United States* | 42 (42.0) | 111 (97.4) |
| Usual Source of Healthcare | 85 (85.0) | 103 (90.4) |
| Patient-Professional Ethnic Concordance* | 19 (19.0) | 67 (58.8) |
| Spanish Survey* | 43 (43.0) | 0 (0.0) |
| | <i>M (SD)</i> | <i>M (SD)</i> |
| Age in years | 46.57 (13.25) | 48.07 (16.45) |

Note. * $p < .05$

There were also significant differences in marital status, $\chi^2(4) = 9.94, p < .05$, in that more Latino women were married, rather than single or divorced. Latino women were also more likely than Anglo women to have been born outside the United States, $\chi^2(1) = 80.14, p < .001$, and to have completed the spanish version of the questionnaire, $\chi^2(1) = 61.35, p < .001$.

Analysis of Covariates

A number of covariates not central to the hypotheses of this study were examined. For Latino American women ($n = 100$), higher attributions of intentionality were positively associated with seeing a healthcare professional from the same ethnic background, $r = .28, p < .01$. Higher levels of negative emotions were also positively associated with seeing a healthcare professional from the same ethnic background, $r = .23, p < .05$. Continuity of care was significantly associated with having health insurance, $r = .36, p < .001$, as well as seeing a female healthcare professional, $r = .25, p < .05$.

For Anglo American women ($n = 114$), there were no significant covariate relationships between attributions of intentionality or controllability. However, higher levels of negative emotions were significantly associated with seeing a male healthcare professional, $r = .29, p < .01$, as well as not having much choice in selecting one's healthcare professional, $r = .18, p < .01$. Continuity of care was positively associated with having health insurance, $r = .18, p < .05$, seeing a female healthcare professional, $r = .23, p < .05$, and having more choice in selecting one's healthcare professional, $r = .32, p < .01$.

A Fischer's r -to- z test was completed on the partitioned research variables, which revealed a number of significantly different bivariate correlations between Latino and Anglo women (Table 2). Such between-group differences provided a basis for multi-group analyses.

Table 2

Intercorrelations, means, and standard deviations for the Latino (n = 100) and Anglo (n = 114) samples.

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 |
|---|---------------------------|---------------------------|--------------------------|--------------------------|---------------------------|--------------------------|---------------------------|--------------------|----------------------|----------------------|--------------------|---------------------|--------------------|--------------------|--------------|
| <i>1. Intentionality</i> | - | | | | | | | | | | | | | | |
| 2. What the HCP did was intentional | .87*** (.93***) | - | | | | | | | | | | | | | |
| 3. The HCP did it on purposeful | .94*** (.95***) | .70*** (.81***) | - | | | | | | | | | | | | |
| 4. The HCP meant to treat you this way | .90*** (.95***) | .62*** (.80***) | .85*** (.88***) | - | | | | | | | | | | | |
| <i>5. Controllability</i> | .20* (.42***) | .17 (.36***) | .16 (.41***) | .23* (.43***) | - | | | | | | | | | | |
| 6. The HCP could have controlled it | .16 (.38***) | .13 (.32**) | .13 (.37***) | .18 (.38***) | .91*** (.93***) | - | | | | | | | | | |
| 7. The HCP could have done something | .18 (.40***) | .12 (.35***) | .17 (.37***) | .22* (.41***) | .92*** (.94***) | .79*** (.82***) | - | | | | | | | | |
| 8. The HCP could have changed/influenced it | .21* (.41***) | .20* (.34***) | .14 (.41***) | .21* (.40***) | .88*** (.93***) | .67*** (.79***) | .72*** (.83***) | - | | | | | | | |
| <i>9. Negative Emotion</i> | .30** (.63***) | .21* (.56***) | .29** (.60***) | .31** (.63***) | .34** (.49***) | .29** (.49***) | .31** (.44***) | .32** (.45***) | - | | | | | | |
| 10. Anger | .21** (.60***) | .13 (.51***) | .22* (.57***) | .22* (.62***) | .28** (.48***) | .22* (.45***) | .26* (.45***) | .28** (.43***) | .89*** (.89***) | - | | | | | |
| 11. Rage | .35*** (.58***) | .26** (.52***) | .34** (.56***) | .35*** (.56***) | .15 (.23*) | .16 (.22*) | .15 (.20*) | .11 (.24*) | .79*** (.80***) | .55*** (.57***) | - | | | | |
| 12. Irritation | .21* (.42***) | .14 (.38***) | .20* (.39***) | .22* (.42***) | .42*** (.53***) | .35*** (.56***) | .38*** (.47***) | .42*** (.48***) | .86*** (.84***) | .68*** (.67***) | .49*** (.47***) | - | | | |
| <i>13. Continuity of Care</i> | -.21* (-.46***) | -.13 (-.45***) | -.24* (-.43***) | -.21* (-.43***) | -.26* (-.30**) | -.28** (-.32**) | -.23* (-.30**) | -.18 (-.21*) | -.35*** (-.40***) | -.36*** (-.35***) | -.23* (-.28**) | -.28** (-.39***) | - | | |
| 14. Did you change Clinics as a result? | -.22* (-.38***) | -.16 (-.36***) | -.23* (-.35***) | -.22* (-.35***) | -.26** (-.28**) | -.27** (-.32**) | -.21* (-.27**) | .23* (-.21*) | -.28** (-.36***) | -.29** (-.31**) | -.20* (-.24*) | -.21* (-.35***) | .92*** (.93***) | - | |
| 15. Did you change HCPs as a result? | -.17 (-.48***) | -.09 (-.47***) | -.21* (-.44***) | -.17 (-.44***) | -.22* (-.26**) | -.25* (-.27**) | -.22* (-.29**) | -.11 (-.18) | -.36*** (-.39***) | -.38*** (-.33***) | -.23* (-.29**) | -.30** (-.37***) | .93*** (.92***) | .71*** (.71***) | - |
| <i>M</i> | 2.66 (2.62) | 2.86 (2.83) | 2.58 (2.50) | 2.56 (2.53) | 4.59 (4.42) | 4.60 (4.49) | 4.62 (4.46) | 4.55 (4.31) | 3.67 (3.58) | 4.08 (4.08) | 2.61 (2.34) | 4.32 (4.31) | .46 (.48) | .48 (.50) | .45 (.48) |
| <i>SD</i> | 1.57 (1.84) | 1.90 (1.97) | 1.72 (1.91) | 1.60 (1.97) | 1.96 (1.96) | 2.20 (2.07) | 2.14 (2.11) | 2.16 (2.12) | 1.76 (1.70) | 2.17 (2.14) | 1.96 (1.94) | 2.12 (1.96) | .42 (.43) | .45 (.48) | .46 (.46) |

Note. Anglo participants are listed in parentheses. Boldface indicates that groups differ significantly at $p < .05$. The above correlational values were obtained after variance from significant covariates was partitioned from the variables of interest.

* $p < .05$, ** $p < .01$, *** $p < .001$

Structural Equation Modeling

Prior to conducting a test of the hypothesized model for the Latino and Anglo samples independently, the data was screened for multivariate outliers using a Mahalanobis distance test. This analysis revealed a violation of multivariate normality for both ethnic groups. As a result, the ML robust test statistics, which corrects for non-normal data, are reported.

Test of the Hypothesized Model (Figure 2)

The baseline hypothesized model fit the data well for both Latino women, $S-B \chi^2(38, n = 100) = 44.87, p = 0.21, \chi^2/df = 1.18, CFI = .987, RMSEA (90\% CI) = .043 (.000, .086)$, and Anglo women, $S-B \chi^2(38, n = 114) = 58.83, p = .02, \chi^2/df = 1.55, CFI = .978, RMSEA (90\% CI) = .070 (.030, .103)$. In fact, attributions and negative emotions accounted for a substantial amount of the variance in continuity of care for both Latino women, $r^2 = .22$, and Anglo women, $r^2 = .29$. The Lagrange multiplier and Wald χ^2 tests did not recommend additional path modifications, and the factor structure, including the direction and significance of factor loadings, appeared similar for both groups. However, there were some differences in magnitude and significance of the associations between factors, which were further examined in multi-group analyses.

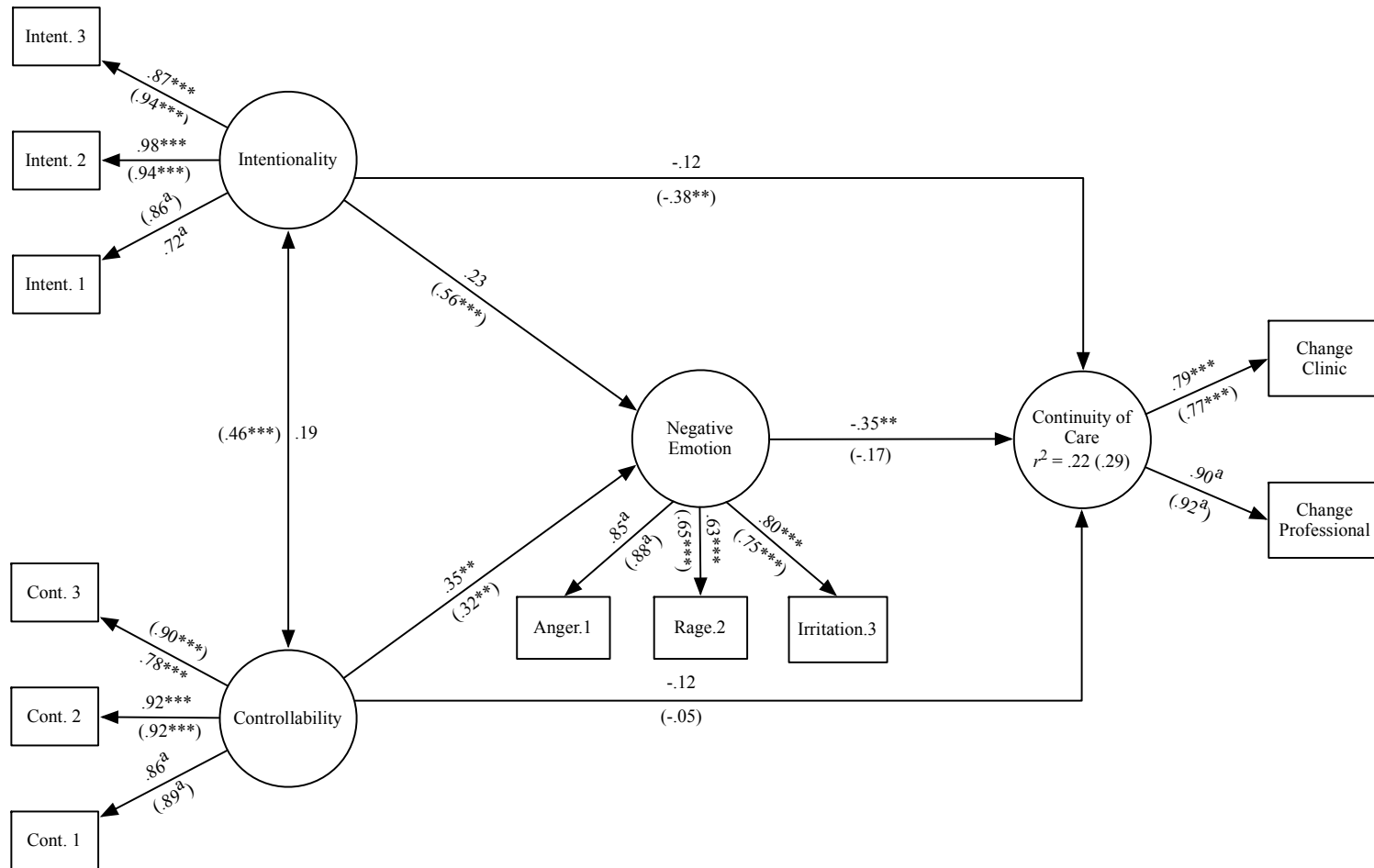


Figure 2. Hypothesis 1: Final model with standardized path coefficients; variance from a number of covariates was controlled for prior to SEM. Latinos: $S-B \chi^2(38, n = 100) = 44.87, p = 0.21, \chi^2/df = 1.18, CFI = .987, RMSEA (90\% CI) = .043 (.000, .086)$. Anglos: $S-B \chi^2(38, n = 114) = 58.83, p = .02, \chi^2/df = 1.55, CFI = .978, RMSEA (90\% CI) = .070 (.030, .103)$.

***Test of Within-Group Differences Between Intentionality and
Controllability (Table 3)***

For Latino women, there were no statistically significant differences between attributions of intentionality and controllability on negative emotions or continuity of care. When the direct paths from intentionality to continuity of care, $\beta = -.12, p > .05$, and controllability to continuity of care, $\beta = -.12, p > .05$, were constrained to be equal, the model did not show a significant decrement in fit when compared to the baseline model, $\Delta S-B \chi^2(1) = .02, p = .89, \Delta CFI = .002$. Similarly, when the indirect paths from intentionality to negative emotion, $\beta = .23, p > .05$, and controllability to negative emotion, $\beta = .35, p < .05$, were constrained to be equal, the model did not show a significant decrement in fit when compared to the baseline model, $\Delta S-B \chi^2(1) = .26, p = .61, \Delta CFI = .002$.

For Anglo women, although there were no statistically significant differences between attributions of intentionality and controllability on negative emotions or continuity of care, results suggest trends towards significant differences. Namely, when the direct paths from intentionality to continuity of care, $\beta = -.38, p < .01$, and controllability to continuity of care, $\beta = -.05, p > .05$, were constrained to be equal, the model did not show a significant decrement in fit when compared to the baseline model, $\Delta S-B \chi^2(1) = 2.74, p = .10, \Delta CFI = -.002$. Similarly, when the indirect paths from intentionality to negative emotion, $\beta = .56, p < .001$, and controllability to negative emotion, $\beta = .32, p < .01$, were constrained to be equal, the model also did not show a significant decrement in fit when compared to the baseline model, $\Delta S-B \chi^2(1) = 2.18, p = .14, \Delta CFI = -.002$.

Table 3

Hypothesis 2: Model building summary for significant difference between controllability and intentionality.

| Model | <i>S-B</i> χ^2 | <i>df</i> | <i>p</i> | χ^2/df | <i>CFI</i> | <i>RMSEA</i> (90% <i>CI</i>) | <i>Model Comparison</i> | $\Delta S-B \chi^2$ | Δdf | <i>p</i> | ΔCFI |
|--|---------------------|-----------|----------|-------------|------------|-------------------------------|-------------------------|---------------------|-------------|----------|--------------|
| Latino Sample (<i>n</i> = 100) | | | | | | | | | | | |
| 1. Baseline model | 44.87 | 38 | .21 | 1.18 | .987 | .043 (.000, .086) | - | - | - | - | - |
| 2. COC model (constrained path from intentionality -> COC as equal to path from controllability -> COC) | 44.89 | 39 | .24 | 1.15 | .989 | .039 (.000, .083) | 2 vs. 1 | .02 | 1 | .89 | .002 |
| 3. Emotions model (constrained path from intentionality -> negative emotion as equal to path from controllability -> negative emotion) | 44.61 | 39 | .25 | 1.14 | .989 | .038 (.000, .082) | 3 vs. 1 | .26 | 1 | .61 | .002 |
| Anglo Sample (<i>n</i> = 114) | | | | | | | | | | | |
| 1. Baseline model | 58.83 | 38 | .02 | 1.55 | .978 | .070 (.030, .103) | - | - | - | - | - |
| 2. COC model (constrained path from intentionality -> COC as equal to path from controllability -> COC) | 61.57 | 39 | .01 | 1.58 | .976 | .072 (.034, .104) | 2 vs. 1 | 2.74 | 1 | .10 | -.002 |
| 3. Emotions model (constrained path from intentionality -> negative emotion as equal to path from controllability -> negative emotion) | 61.01 | 39 | .01 | 1.56 | .976 | .071 (.032, .103) | 3 vs. 1 | 2.18 | 1 | .14 | -.002 |

Note. *S-B* χ^2 = Satorra Bentler Scaled Statistic. *CFI* = Robust Comparative Fit Index. *RMSEA* = Robust Root Mean Square Error of Approximation. *90% CI* = 90% Confidence Interval for *RMSEA*.

Test of Configural Invariance (Table 4, Model 1)

Testing for measurement equivalence began with the least restrictive model in which only the factor structure of the baseline model, namely the number of factors and the factor-loading pattern, was checked for equality across ethnic groups. The requirement for configural invariance suggested that the same items must be indicators of the same factor for Latino American and Anglo American women, yet differences in factor loadings are permitted across groups (Hoyle, 1995). The fit indices revealed a good fit, $S-B \chi^2(76, n = 214) = 103.70, p = 0.01, \chi^2/df = 1.36, CFI = .981, RMSEA (90\% CI) = .059 (.025, .085)$.

Test of Measurement Invariance (Table 4, Model 2)

In the second level of measurement equivalence, the factor loadings of the baseline model were constrained to be equal across ethnic groups, making these coefficients invariant between Latino American and Anglo American women. The fit of the constrained measurement model was also a good fit, $S-B \chi^2(83, n = 214) = 108.17, p = 0.03, \chi^2/df = 1.30, CFI = .983, RMSEA (90\% CI) = .053 (.016, .079)$. Because the difference between the fit of the constrained measurement model and the configural model was not significant, $\Delta S-B \chi^2(7) = 4.47, p = .72, \Delta CFI = .002$, measurement equivalence was assumed. Thus, any group variations observed in the multi-group structural model could be interpreted as cross-cultural differences rather than measurement artifacts because the measurement model operated similarly for both Latino American and Anglo American women (Byrne, 1995).

Table 4

Hypothesis 3: Model building summary for tests of configural, measurement, and structural invariance

| Model | <i>S-B</i> χ^2 | <i>df</i> | <i>p</i> | χ^2/df | <i>CFI</i> | <i>RMSEA</i> (90% <i>CI</i>) | <i>Model Comparison</i> | Δ <i>S-B</i> χ^2 | Δ <i>df</i> | <i>p</i> | Δ <i>CFI</i> |
|---|---------------------|-----------|----------|-------------|------------|-------------------------------|-------------------------|------------------------------|--------------------|----------|---------------------|
| 1. Configural model (no constraints) | 103.70 | 76 | .01 | 1.36 | .981 | .059 (.025, .085) | - | - | - | - | - |
| 2. Measurement model (factor loadings constrained across ethnicity) | 108.17 | 83 | .03 | 1.30 | .983 | .053 (.016, .079) | 2 vs. 1 | 4.47 | 7 | .72 | .002 |
| 3. Structural model (constrained factor loadings and 6 structural paths) | 116.89 | 89 | .03 | 1.31 | .981 | .054 (.020, .079) | 3 vs. 1 | 13.19 | 13 | .43 | .000 |
| 4. Partial Structural model (constrained factor loadings and 5 structural paths, released correlation between intentionality and controllability) | 112.52 | 88 | .04 | 1.28 | .983 | .051 (.012, .077) | 4 vs. 1 | 8.82 | 12 | .71 | .002 |

Note. *S-B* χ^2 = Satorra Bentler Scaled Statistic. *CFI* = Robust Comparative Fit Index. *RMSEA* = Robust Root Mean Square Error of Approximation. 90% *CI* = 90% Confidence Interval for *RMSEA*.

Test of Structural Invariance (Table 4, Model 3)

To test for differences in the magnitude of the paths among the factors across the two ethnic groups, constraints were imposed on all of the structural paths. Specifically, invariance tests for structural path coefficients were used to determine whether the relations between factors varied as a function of ethnic group. In comparison with the configural model (Table 4, Model 1), the constrained structural model did not show a significant decrement in fit, $\Delta S-B \chi^2(13) = 13.19, p = .43, \Delta CFI = .000$. Although explicit criteria for a decrement in fit was not met, a review of the Lagrange multiplier test suggested significant between-group differences in the covariant path between perceived controllability and perceived intentionality for Latino and Anglo women, $LM \chi^2(1) = 5.30, p = .021$.

Test of Partial Structural Invariance (Table 4, Model 4)

After releasing the constraint on the covariant path from perceived controllability and perceived intentionality for Latino women, $\beta = .19, p > .05$, and Anglo women, $\beta = .46, p < .001$, the fit of the model showed evidence of fit improvement from the test of structural invariance (Model 3), and showed similar fit indices when compared to the configural model (Model 1), $\Delta S-B \chi^2(12) = 8.82, p = .71, \Delta CFI = .002$. Because the LM test did not reveal any additional significant between-group differences, and since the fit indices shown in this test of partial structural invariance was comparable to the configural model (Model 1), no additional paths were released. In sum, the covariant parameter from perceived controllability and perceived intentionality was the only structural path

determined to be statistically invariant between Latino, $r = .19$, $p = .07$, and Anglo, $r = .46$, $p < .001$, women.

Summary of Research Hypotheses

The hypothesized structure of relations among attributions of intentionality and controllability, negative emotions, and continuity of care fit the data for both Latino and Anglo women. Ethnicity was found to significantly impact the size of the structural effects between variables, resulting in different combinations of significant direct and indirect effects for the Latino and Anglo models.

The first hypothesis, concerning the influence of attributions of intentionality and controllability on negative emotions and continuity of care was confirmed for each ethnic group. For Anglos, women who made higher attributions of intentionality for mistreatment had lower levels of continuity of cancer-related care, $\beta = -.38$, $p < .01$. However, these direct relationships were less important for Latinos, $\beta = -.12$, $p > .05$. The direct effects of attributions of controllability on continuity of cancer-related care were minimal for both ethnic groups. However, for Latino women, the association between attributions of controllability and continuity of care was indirect through negative emotions, $\beta_{\text{indirect}} = -.12$, $p < .05$, which was not the case for Anglo women. Specifically, attributions of controllability for Latino women positively influenced negative emotions, $\beta = .35$, $p < .01$, and negative emotions in turn negatively influenced continuity of cancer-related care, $\beta = -.35$, $p < .01$. The indirect (mediating) relationship between attributions of intentionality and continuity of care through negative emotions was not significant for Latino women. These specific findings are also consistent with the third hypothesis,

which predicted that ethnicity would moderate the structural relations between attributions, negative emotions, and continuity of care.

The second hypothesis, concerning attributions of intentionality having more influence on negative emotions and continuity of care than attributions of controllability, was partially supported for Anglo women but not supported for Latino women. More specifically, although the direct paths from attributions of intentionality and controllability to negative emotions or continuity of cancer-related care did not reflect statistically significant within-group differences for either ethnic group (Table 3), differences in the magnitudes of the structural paths provide meaningful information. For example, in the case of Anglo women, higher attributions of intentionality predicted lower levels of continuity of care, $\beta = -.38, p < .01$, while attributions of controllability were less influential on continuity of care, $\beta = -.05, p > .05$. In addition, although the relationship between attributions of intentionality and controllability were both positively related to negative emotions for Anglo women, attributions of intentionality were more predictive of negative emotions, $\beta = .56, p < .001$, than attributions of controllability, $\beta = .32, p < .01$. For Latino women, inverse relationships were observed, suggesting that attributions of controllability are more influential on negative emotions than attributions of intentionality. For instance, in the case of Latino women, while the size of the effects from attributions of intentionality and controllability to continuity of care were equivalent, $\beta = -.12, p < .05$, attributions of controllability were more positively related to negative emotion, $\beta = .35, p < .01$, than attributions of intentionality, $\beta = .23, p = .05$.

The third hypothesis was confirmed, which predicted that the structure of relations between attributions, negative emotions, and continuity of care would be

moderated by ethnicity. The test of invariance revealed that the covariant parameter between attributions of intentionality and attributions of controllability was statistically variant between Anglo women, $\beta = .46, p < .001$, and Latino women, $\beta = .19, p > .05$. Additional evidence suggests that the influence of attributions of intentionality on continuity of care was stronger for Anglo women, $\beta = -.38, p < .01$ than for Latino women, $\beta = -.12, p > .05$. Moreover, the influence of attributions of intentionality on negative emotions was also stronger for Anglo women, $\beta = .56, p < .001$ than for Latino women, $\beta = .23, p > .05$.

CHAPTER FOUR

DISCUSSION

Consistent with the conceptual model guiding this study, this research revealed that population diversity factors (ethnicity) and psychological processes (mistreatment-related attributions and emotions) are relevant to the study of health behavior and health disparities, such as a women's decision to return to the same healthcare professional or clinic for cancer-screening exams following a mistreatment experience. As predicted, mistreatment-related attributions of intentionality and controllability, along with negative emotions, influenced continuity of care for both Latino and Anglo women. These findings confirm the importance and utility of Betancourt's integrative model (2009) since this model provided a useful applied theoretical framework for cross-cultural research regarding complex determinants of behavioral phenomena. In addition, these findings also confirm the importance of Weiner's theory of attribution and emotion (Weiner, 1995) since attributions and emotions were shown to significantly influence a woman's subsequent interaction with healthcare professionals and healthcare clinics. Taken as a whole, these findings have important implications for patient-professional interactions and the effectiveness of healthcare systems, interventions, and policies.

Specifically, higher attributions of intentionality predicted lower continuity of cancer-related care in Anglo American women. For Latino American women, higher attributions of controllability predicted lower levels of continuity of care indirectly, through negative emotions. While the connection between mistreatment-related emotional processes and behavioral outcomes for Latino women confirms findings in previous research (Betancourt et al., 2011), differences in how Latino American and

Anglo American women attribute mistreatment raise interesting empirical questions. Namely, although Anglo women demonstrated attributional and emotional processes consistent with attributional research on the differential impact of perceiving a negative interpersonal event as intentional rather than controllable (Malle et al., 2003; Weiner, 1995), why did Latino women not follow the same expected attributional processes after perceiving interpersonal healthcare mistreatment? That is to say, how is it that Latino women who perceived interpersonal healthcare mistreatment as more controllable had higher levels of mistreatment-related negative emotions and, in turn, lower levels of continuity of cancer-related care than those who perceived interpersonal healthcare mistreatment as more intentional?

These findings might be explained by Betancourt's integrative model of culture, psychological processes, and health behavior (2009) (see Figure 1) since this theory suggests the existence of a direct relationship from cultural factors (column B) to health behaviors (column D), and an indirect relationship from cultural factors (column B) to health behaviors (column D) through the mediating role of psychological processes (column C). Therefore, a number of cultural factors should be considered as plausible explanations for the moderating effects of ethnicity and unaccounted variance in continuity of cancer-related care. First, collectivism may influence how one interprets interpersonal events, such as healthcare mistreatment. Previous research suggests that collectivistic cultures, such as Latinos, are more inclined to evaluate interpersonal phenomena based on the situation as a whole, rather than on a specific individual's behavior (Markus & Kitayama, 1991; Zaw, 2006). Thus, Latino American women who experienced interpersonal healthcare mistreatment may be more likely to make

situationally-based explanations for mistreatment, such as attributions of controllability, rather than individually based explanations directed at the healthcare professional, such as attributions of intentionality. Second, *Simpatía*, a Latino cultural script regarding particular patterns of interpersonal exchange, may also be influencing these attributional and emotional processes. *Simpatía* has been defined as the expectation that one should avoid interpersonal conflict, emphasize positive behaviors in positive situations, and deemphasize negative behaviors in negative situations (Triandis, Marin, Lisansky, & Betancourt, 1984). Thus, because Latinos have previously scored higher on measures of *simpatía* compared to their Anglo counterparts (Triandis et al., 1984), Latino women may be culturally conditioned to trivialize or under report the adverse behavior of a healthcare professional, thereby reducing the likelihood of attributing someone's behavior as intentional. Most importantly, levels of acculturation may be influencing the structural relationships of this study since a woman's level of acculturation may shape any of the previously discussed cultural factors or psychological processes (O'Malley, Kerner, Johnson, & Mandelblatt, 1999; Suarez & Pulley, 1995). That is to say, if a Latino woman were highly acculturated to Anglo-American cultural values and assumptions, she could have lower levels of collectivism and *simpatía*, which might influence her cognitions and emotions related to current and subsequent interactions with healthcare providers and the healthcare system. In summary, collectivism, *simpatía*, and acculturation are probable explanations for why Latino women are more inclined to make attributions of controllability for interpersonal healthcare mistreatment.

The moderating role of ethnicity found by this study also has conceptual ramifications that should be examined according to Betancourt's integrative model

(2009) (see Figure 1). This moderation demonstrates how research that only investigates the role of psychological factors (column C) on health behaviors (column D), without considering population categories (column A) or cultural processes (column B), may lead to the spurious conclusion that psychological processes (column C) do not play as much of a role in health behavior (column D). In other words, if an adequately fit structural model was created for a combined sample of Latino and Anglo women, rather than creating a separate structural model for each ethnic group, diluted results may have emerged since the moderating effect of ethnicity would be unaccounted for.

A number of preliminary analyses not directly related to this study are also worthy of discussion. That is, prior research cites (1) a tendency for patients to interact with female healthcare professionals in a more collaborative manner (Roter & Hall, 2004), as well as (2) patients' preference for female healthcare professionals as a potential barrier to preventative medicine if female providers are not available (Lurie, Margolis, McGovern, Mink, & Slater, 1997). This current study confirmed this trend in that both Latino and Anglo women had greater continuity of care following a mistreatment experience by a female healthcare professional as compared to a male healthcare professional. Investigating the specific interpersonal factors that contribute to a patient's decision to forgive and return to a healthcare professional or clinic after a mistreatment experience may help address current health disparities in cancer-screening trends. For instance, a recent study by Hannawa (2012) found that physician nonverbal involvement and communication during a Physician's error disclosure was associated with higher patient ratings of closeness, trust, forgiveness, empathy, and satisfaction. Conversely, physicians who displayed detached and uninvolved nonverbal behaviors

during an error disclosure led to significantly higher patient ratings of emotional distress and avoidance of the physician.

Research on patient-professional relationships often highlights the importance of racial/ethnic concordance between a patient and their professional (Chen, Fryer Jr, Phillips Jr, Wilson, & Pathman, 2005). However, evidence from this study suggests that Latino women who saw a Latino healthcare professional were more likely to experience negative emotions related to healthcare mistreatment than those who saw a non-Latino professional. Such findings suggest there may be a number of complex culturally based social-class issues contributing to a cultural divide between minority health professionals and their ethnically-concordant patients, such as differences in education, income, or country of origin. Such differences may exacerbate patients' perceptions of mistreatment through negative emotions, and in turn, reduce continuity of cancer-related care. In other words, Latino women may assume a relationship between ethnicity and culture that is not reflected in the context of the clinical encounter. Because the Institute of Medicine report on Unequal Treatment (Smedley et al., 2003) recommended increasing the number of minority health professionals as one way to address current health disparities, more empirical attention should be devoted to clinical encounters that occur between patients and professionals from different socio-economic and ethnic backgrounds.

Directions for Future Research

This study raises a number of interesting questions related health disparities that should prompt subsequent empirical investigations. More specifically, future research related to healthcare mistreatment should not only attempt to reduce the impact of

attributions and emotions on continuity of care once it has been perceived, but it should also strive to prevent mistreatment from occurring in the first place. From a methodological approach, subsequent studies would also benefit from modeling related cultural factors alongside psychological processes. According to the conceptual model guiding this research, it is expected that this type of design would reveal a more comprehensive cross-cultural understanding of patient-professional interactions and health disparities, as well as assist in the development of more effective culturally based intervention strategies.

Subsequent studies would be well served to investigate factors that may contribute to a lack of perceived mistreatment on a more general level, such as the amount of time that has passed since the mistreatment occurred, or certain characteristics of the healthcare professional, such as Spanish fluency, which has been shown to increase a Latino patient's satisfaction with healthcare interactions (Schutt, Cruz, & Woodford, 2008). Moreover, researchers may also want to explore other attributions for mistreatment that could reduce the likelihood that someone will not return to the same healthcare professional or clinic, such as attributing mistreatment as originating from an external locus of control (Strickland, 1978), or attributing the behavior of the healthcare professional as something unstable (Weiner, Nierenberg, & Goldstein, 1976). Additionally, since this study only sampled Latino and Anglo women who experienced healthcare mistreatment in the context of a breast or cervical cancer-screening procedure, it may be interesting to evaluate how these mistreatment-related attributions and emotions differ among men, other ethnic groups, or different aspects of preventive medicine.

As specific intervention strategies for the patient are designed and evaluated, principles of stress inoculation (Meichenbaum, 1985) may be a useful way to reduce the effects of healthcare mistreatment by informing women what to expect when obtaining preventative services. Additionally, interventions that employ techniques of distress tolerance (Dimeff & Linehan, 2001) may help teach Latino women to effectively regulate mistreatment-related emotions. In fact, researchers may also want to consider developing specific measurement strategies designed to identify women who have interacted with their healthcare professional in a way that might significantly compromise subsequent continuity of care.

Finally, future research should explore attributional and emotional processes from the perspective of the healthcare professional. In other words, investigating how healthcare professional's attributions and emotions relate to outcomes associated with the clinical encounter, such as cultural sensitivity, may guide future intervention strategies, and thus improve the interactional quality between patients and their healthcare professionals. However, because self-directed attributions for one's actions in an interpersonal setting are significantly related to subsequent motivation and behavior (Weiner, 2000), future research should not only consider interpersonal attributions and emotions related to the behavior of a healthcare professional's patients, but it should also investigate how a healthcare professional's intrapersonal attributions and emotions influence the nature of the clinical encounter and associated behavioral outcomes.

Limitations of the Study

Despite the notable findings of this study, some limitations should be considered. First, despite the fact that findings from the test of invariance revealed a statistically significant noninvariant covariate structural path, the relatively small sample size for each ethnic group may have resulted in the inability to detect additional significant structural paths while adequately controlling for covariates. Furthermore, while Betancourt's integrative model (2009) provided both meaningful support for the study's hypotheses, and guidance while explaining the SEM findings, the cross-sectional design of this study did not allow for the assessment of temporal relationships. Another limitation was the possibility of selection and participation biases that limit the generalizability of this study's results. For instance, although the Latino population recruited for this study reflects demographic characteristics of women in Southern California, the sample was primarily from a Mexican cultural background. As a result, it is unclear whether these research findings could be replicated with or generalized to Latino women from other national origins, regions in the United States, levels of acculturation, or levels of educational attainment.

Implications

These results, which emerged from a test of theory-based hypotheses, have important implications for interventions with both health professionals and their diverse patients. These findings should be used to educate and raise health professionals' level of awareness regarding the importance of effective patient-professional relations and the impact of their behavior on continuity of care. Previous research suggests even a simple

behavioral training program for physicians has the potential to significantly improve interactional quality between patients and professionals (Rodriguez et al., 2008). Such educational interventions may help to improve trends in cancer screening, reduce disparities in continuity of care, and lower mortality rates associated with breast and cervical cancer among Latino and Anglo American women in the United States.

Results concerning the moderating role of ethnicity suggest that efforts designed to improve relations among healthcare professionals and their Latino, as compared to Anglo female patients, may want to emphasize different aspects of the clinical encounter. For instance, when working with Latino women, healthcare professionals could inquire about their patients' causal (situationally-based) perceptions of the professional's behavior as something the professional could have controlled, as well as the patient's emotional reactions during and after a clinical encounter. When working with Anglo women, healthcare professionals may be more effective at improving continuity of care by responding appropriately to patients who perceive a health professional's adverse behavior was purposeful or intentional. Simple improvements in a physician's interactional style, such as asking how the patient is feeling, or thoroughly explaining the steps to a given procedure, can communicate empathy, compassion, and a sense of concern for the patient's well being. Overall, the findings of this study provide important empirical evidence for developing intervention strategies designed to reduce cancer-related health disparities by addressing attributional and emotional processes relevant to patient-professional interactions.

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APPENDIX A

SCALE ITEMS

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 examination, or Pap test, please check the first box. If it has happened to you, please mark how much it bothered you.

The Health Professional...

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 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 warn me that the exam may be painful.
24. Was not thorough and careful.

Social Attribution and Emotion Scale:

- *Attributions of Intentionality Sub-Scale:* Please think about the specific negative experience you had with your health professional that bothered you the most and answer the following questions.
 1. Do you believe that what the doctor did was intentional?
 2. Do you think he/she did it on purpose?
 3. Do you think the health professional meant to treat you in this way?

- *Attributions of Controllability Sub-Scale:* Of the 24 reasons listed above [mistreatment scale], which do you think is the main reason for the health care professional's behavior (it is likely to be an item that you marked with a higher number compared to others)? Please think about this PARTICULAR REASON and answer the following questions:
In my opinion, this reason...
 1. Is something the health professional could have controlled.
 2. Is something the health professional could have done something about.
 3. Is something the health professional could have changed or influenced.
- *Negative Emotions Sub-Scale:* How much did you feel the following emotions towards the health care professional, as a result of the negative incident?
 1. Anger
 2. Rage
 3. Irritation

Continuity of Cancer-Related Care Scale: Please think of the negative experience you had with the health professional and answer the following questions.

1. As a result of this incident, did you go to a new health clinic to receive your care (or do you plan to go to a new health clinic)?
2. As a result of this incident, did you change healthcare professionals (or do you plan to change healthcare professionals)?

APPENDIX B
INFORMED CONSENT FORM



*School of Science and Technology
Department of Psychology*

*11130 Anderson Street
Loma Linda, California 92350
(909) 558-8577
Fax: (909) 558-0171*

Greetings,

If you are an Anglo American (Non Latino-White) or Mexican/Mexican American woman and are 21 years of age or older you are invited to participate in this study entitled "Culture and Healthcare." The purpose of this study is to better understand women's opinions and views about health care and services that women can use to stay healthy. The study is expected to help health care professionals better serve the needs of women of culturally diverse backgrounds.

If you agree, participation will take about 30-45 minutes and you will be asked some questions about your opinions, views, and expectations about health care and related issues such as breast and cervical cancer. By participating, you may feel a little uncomfortable by thinking about your own health, but you will be exposed to no greater risk other than what you are exposed to in daily life.

After you participate in the study, you may be asked whether you know of a friend who you think would also like to participate in this study. You can either give your friend's contact information to the researcher or else the researchers will provide you with information so that your friend may contact us directly after you talk to them. However, it is not necessary for you to recommend a friend.

Although you will not benefit personally, your involvement will help researchers learn more about women's opinions and views concerning healthcare and related issues. You will also be given \$15 as a thank you. In addition, you will receive a gift bag including promotional items related to women's health such as breast and cervical cancer. You will also receive educational brochures on disease prevention and information on how to obtain free and low cost cancer screening services in your area.

Participation is completely voluntary and there is no penalty for not participating. If you choose not to participate in this study, you will still receive the gift bag and information about health services. You may choose to withdraw from participating at any time without any negative consequence.

Your responses to this survey are strictly confidential and will only be analyzed as part of a larger group of respondents.

We hope that you will decide to participate in this research and we thank you for your time and consideration. If you have any questions about participation, you may contact the investigator as follows:

Patricia Flynn, Ph.D., M.P.H.
Department of Psychology
(909) 558-7737

Hector Betancourt, Ph.D.
Department of Psychology
(909) 558-7738

If you wish to contact an impartial third party, not associated with this study, regarding any concern or complaint about this study please contact the following:

Office of Patient Relations (909) 558-4647, Loma Linda University Medical Center

Loma Linda University
Adventist Health Sciences Center
Institutional Review Board
Approved 1/27/10 Void after 1/26/2011
57275 Chair R. J. Rippe

A SEVENTH-DAY ADVENTIST HEALTH SCIENCES INSTITUTION

By signing and dating below I acknowledge I have read the above information, I freely consent to participate in this study, and I am 18 years or older.

I consent to participate in this study.

Signature: _____ Date ____ / ____ / ____

Please keep the Participants' Copy of this form for your records.

**Loma Linda University
Adventist Health Sciences Center
Institutional Review Board
Approved 1/27/10 Void after 1/26/2011
57275 Chair R. J. Ripstein**