

ETHNICITY AND CULTURAL ISSUES

GUEST EDITORS: JOHN E. ZEBER, JODI M. GONZALEZ, RICHARD VAN DORN,
AND ALEJANDRO INTERIAN





Ethnicity and Cultural Issues

Depression Research and Treatment

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Guest Editors: John E. Zeber, Jodi M. Gonzalez,
Richard Van Dorn, and Alejandro Interian



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Editorial

Ethnicity and Cultural Issues

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This special journal issue was devised to solicit original manuscripts on current research findings, review studies, or conceptual papers pertaining to clinical or community level interventions, innovative treatment approaches, and discussions of cross-cultural issues pertinent to reducing ethnic disparities while improving care provided to patients with depression. Envisioning a collection of quality studies that encompassed a range of diverse topics reflecting the complexity of this issue, we broadly sought papers on areas including, but not limited to health beliefs, stigma, the care-seeking process, genetics and pharmacodynamics, financial barriers or other access problems, informal sources of care, healthcare reform and policy implications for mental health parity, the contribution and burden of medical comorbidities and care coordination, therapeutic alliance and cultural views of clinical power dynamics, unique issues regarding age, gender, and religious or sexual orientation, treatment retention and medication adherence, familial or social dynamics, specific treatment modalities, and special concerns of community patients and large insured populations alike.

Although older national epidemiology surveys, such as the National Comorbidity Study and the Epidemiological Catchment Area study, found relatively similar prevalence rates for all mental health conditions across ethnic groups, [1] some evidence from recent studies like the National Survey of American Lives (NSAL) and National Latino and Asian America Study (NLAAS) is beginning to document possible rate differences in depression [2, 3]. However, forty years of evidence from actual diagnostic rates in research or clinical practice continues to indicate that Hispanic and African-American patients, for example, are diagnosed far

less frequently with affective disorders and far more often for psychosis than white patients [4, 5]. Hence, for many reasons, the appropriate detection of depression may be underreported in ethnic minority groups, subsequently leading to insufficient treatment. An increasing body of research is accumulating that focuses on a variety of pertinent issues, including perceived stigma and discrimination leading to lower health status, with depression as a significant factor [6], the interaction of gender with ethnicity and depression [7], how one's culture and worldview can help moderate hopelessness and suicidality [8], and the role of comorbid medical illnesses and substance abuse upon appropriate treatment seeking for depression in minority patients [9, 10]. These scholarly inquiries, in addition to numerous recent studies investigating other psychosocial dimensions, offer tremendous promise regarding the academic community and its aspiration to tackle these challenges. Yet despite this positive research trend and an ongoing emphasis of promoting cultural competence to address potential disparities in assessment and care (evidenced in the Surgeon General report on mental health and ethnicity [1]), very few research studies overtly frame their study design approach within a suitable conceptual model to examine the complex myriad of issues [11]. Consequently, advancements in translating such important findings into clinical practice to improve daily life and depression outcomes might be compromised by a failure to truly understand essential cultural foundations.

Though we appreciate the difficulty of gathering and synthesizing information covering the scope of all these subjects, this issue nevertheless represents a collection of intriguing, high-quality scholarly work that targets essential issues central to the research and clinical community. We

believe that the papers included here offer a variety of approaches that identify current topics linking prior research to the consensus upon introducing a greater awareness of cultural competency and lingering disparities in diagnosis, treatment, and outcomes. Appropriate care for minority patients involves a complex interplay of appropriate access to care, illness recognition, health beliefs and a willing to seek treatment, patient-provider dynamics, cultural and family support, and the availability of mental health specialists and informal sources of care. A deeper exploration of these dimensions will enable healthcare systems, providers, and patient advocates to address the unique needs of minorities with psychological problems.

Beginning with our two invited papers, both from international experts in cultural issues pertaining to mental health conditions in different ethnic and cultural groups, L. H. Zayas et al. explored the role of internalizing behaviors among Latina adolescents. In a study cohort where over half of these young women experienced recent suicide attempts, findings here suggest that positive mother-daughter relationships within the context of familial culture and mutual values reduced the likelihood of suicidal behavior. This intriguing, multilayered study revealed that higher degrees of Hispanic cultural involvement by the daughter positively supported the family dynamic and corresponded to lower levels of detrimental internalizing behavior, particularly being withdrawn or depressed. Next, the review paper presented by Z. Kalibatseva and F. T. Leong provides an insightful perspective on the presentation of depression across an increasingly diverse, heterogeneous Asian-American population, with the inherent challenge of appropriate assessment and quality treatment. Recognizing how symptom expression and recognition establishes a trajectory of care provision, the authors discuss the cultural validity and reliance upon the DSM-IV categorization of depression in minority patients. Linking conceptual theory with empirical research observations from numerous epidemiological and psychosocial studies, recommendations are provided regarding the diagnostic challenges in different Asian groups, as well as the complex interactions of acculturation, language proficiency, and socioeconomic status that affect treatment and recovery among these depressed individuals.

Turning to our general submissions, we received a large pool of papers covering a diverse range of topics, patient populations, and clinical milieus. After a rigorous peer review process, which included the invited papers, we selected six of these papers which represent an intriguing cross-section of the current work underway within this challenging field. D. S. Greenawalt and colleagues used primary data collected from Iraq/Afghanistan veterans in finding high overall rates of depression, which influenced mental health utilization; however, few ethnic differences in secular care-seeking behavior were observed though African-Americans did report more participation in religious-counseling services. Investigating an infrequently studied but important topic, L. F. Graham et al. present comprehensive, observational analyses from a small cohort of sexual minority men. In addition to high levels of depression and anxiety, nearly two-thirds of self-reported mental health problems were attributable to

perceived discrimination and internalized homonegativity, summarizing the interaction of sexual identity development with ethnicity and its impact on social and psychological well-being. Utilizing Veterans Affairs administrative data in a project focusing upon perioperative psychiatric conditions (i.e., versus more commonly addressed postsurgical depression), L. A. Copeland and her colleagues examined factors associated with receipt of coronary and other surgeries in an ethnically mixed national sample of over 300,000 veterans. Effectively adjusting for many commodities and other relevant covariates, individuals with depression were consistently less likely to undergo any surgery. Pertinent to this special issue theme, while Hispanic and American-American veterans were significantly less likely to experience vascular procedures than white patients, they underwent more surgeries of the digestive system.

The study led by D. F. Briones et al. concerns the overlap of depression and ethnicity with multiple chronic physical health conditions in elderly community residents of the Texas-Mexico border region. Further exploring interactions with daily functioning and educational attainment, the authors found that Mexican-Americans experienced a higher prevalence of depression but also greater burden from several other chronic health conditions, suggesting a need to better disentangle the role of ethnicity from important socioeconomic considerations. D. M. Tyson and colleagues framed their ethnographic study of four different Latino immigrant groups (total $n = 120$) through cognitive anthropology and theories of depression. This intriguing qualitative analysis revealed some commonality concerning the causality of depression and treatment options, one speculation related to a shared immigration experience. However, their findings offer insights into potential subgroup distinctions that can help shape culturally competent interventions. Finally, H. Tsuda offers a unique conceptual approach in sharing an older Japanese cultural view of manic-depressive illness and its potential relevance to modern clinical practice. Relating this study to the predominance of the empiric grounding of current diagnosis and research concerns, H. Tsuda presents an updated view of more anthropological framing and incorporating cultural views with a patient's personal emotional space during the therapeutic process.

In conclusion, the journal and guest editors for this special issue were impressed with the quality of current research efforts focused on a variety of topics central to improving our understanding of culture and depression. We understand that this is only a slice of ongoing work that continues to examine the complex interactions of ethnicity/race, often intangible cultural factors, symptom presentation and severity, care-seeking attitudes, appropriate treatment, and outcomes associated with major depression. The personal, societal, clinical, and research significance cannot be underestimated, particularly as we enter an era of healthcare reform opportunities and admittedly inherent pitfalls, along with constantly evolving treatment options. Nevertheless, potential challenges abound for continuing to ground efforts within a cultural competency framework for

eliminating potential disparities with a common objective of improving both physical and psychological health. The journal wishes to express our appreciation to the current issue authors, numerous other innovative studies underway being conducted across a range of populations and methodological approaches, and to patients and providers encountering the effects of depression on a daily basis. We welcome the opportunity to present these excellent and important studies and look forward to sharing future discoveries and interventions designed to improve the quality of life of those afflicted with depression.

John E. Zeber
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Research Article

Can Better Mother-Daughter Relations Reduce the Chance of a Suicide Attempt among Latinas?

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National surveys and other research on adolescent Latinas show that adolescent females have higher rates of suicidal ideation, planning, and attempts than other ethnic and racial minority youth. Internalizing behaviors and family conflicts are commonly associated with suicidality in research on adolescents. In the case of Latinas, we explore the connection between adolescent Hispanic cultural involvement, mother-adolescent mutuality, internalizing behaviors, and suicidality. This paper presents data from a study of 232 Latinas, some with a recent history of suicide attempts ($n = 122$). The results show that higher adolescent Hispanic cultural involvement was associated with greater mother-daughter mutuality and thus led to reduction in the likelihood of suicide attempts. The relationship between mother-daughter mutuality and suicide attempts among Latinas is mediated by specific internalizing behaviors (withdrawn depressive). Our findings highlight the positive effect that Latino cultural values have in the relationship between Latina adolescent and their mothers and confirm the importance that internalizing behaviors and the mother-daughter relationship have for suicide attempters.

1. Background

Since 1991, the Youth Risk Behavior Surveillance System (YRBSS) has shown that the rates of suicide ideation, planning, and attempts by adolescent Latinas are higher than those of adolescents of other ethnic and racial groups [1, 2]. Latinas are also more likely to have attempted suicide one or more times in the year prior to the survey (11.1%) compared to Blacks (10.4%) and Whites (6.5%) [1]. In addition, Latina adolescents are known to manifest higher levels of depression and suicidal behaviors than female adolescents from other racial and ethnic groups [3–6]. Not only do Latinas report more persistent feelings of sadness and hopelessness, but they are consistently more prone to ideate, plan, and attempt a suicide. For example, the 2009 YRBSS [1] shows that Latina adolescents were more likely to feel sad or hopeless (39.7%) than any other group of girls (Black, 37.5% or White, 31.1%). Finally, the existing literature has provided ample evidence for the connection between depression and suicide attempts among adolescents [7] and between attempts and completed suicide [8].

1.1. Hispanic Cultural Involvement, Mother-Daughter Relationships, and Suicidal Behavior. The examination of interpersonal transactions during adolescence between Latina suicide attempters and their families, especially their mothers, can provide important insight into the course of suicidal thinking and behavior [9]. The adolescent years are important in suicidal populations, because during this period the relationship between a mother and her daughter is put to the test [10]. The biggest test is the adolescent's at times confusing desire for autonomy and for connections with her parents. The acculturation differences that US Latino parents and adolescents face influence their interactions and add another layer of complexity to the relational challenges encountered during adolescence [11].

The difference between Latina adolescents and their parents is that youth acculturate faster than parents [12]. These dissimilar acculturation paces may affect the relationship between the girl and her mother [13]. Mothers may wish their daughters to succeed in the mainstream cultural system but at the same time may struggle with the level of autonomy and independence afforded to American adolescents.

Daughters may embrace the mainstream cultural customs that are not always endorsed by their mothers. This acculturation dynamic, which often diminishes the mother sense of competency as a mentor to her daughter, may result in the daughter misjudgment of her mother ability to relate, care for, and connect with the girl needs. On another side, mothers may also want their daughters to retain Latino values and cultural practices and may not encourage the daughters movement towards more individual autonomy. Girls who are more involved in Hispanic culture can at least be more attuned to their mothers perspectives than girls who have lower Hispanic cultural involvement [14].

Previous findings show that Latina attempters and Non-attempters may be similar in acculturation and familistic attitudes [9]. Attempters, however, have significantly less mutuality and communication with their mothers than Non-attempters [9]. Mutuality refers to the bidirectional exchange of feelings, thoughts, and actions between people in a relationship [15]. Higher levels of mutuality with parents, that is, higher levels of connectedness and communication, are protective factors for suicidal ideation and attempts [9, 16]. The potential pathways from the adolescent Hispanic cultural involvement to her suicide attempts, as mediated by the mother-daughter relationship, require further analysis.

1.2. Family Dynamics, Internalizing Behaviors, and Suicidality. The adolescent interpersonal difficulties with her parents seem to play a central role in depression leading to suicidal behavior [17]. Among Latina adolescents, low levels of family support and high levels of family conflict are associated with more internalizing behaviors [18]. Reducing parent-daughter conflict and fostering closer family ties reduces internalizing behaviors in Latina adolescents and lessens the likelihood of attempting suicide [14]. Achenbach and Rescorla [19] have described internalizing behaviors as encompassing three subgroups to include withdrawn depressive (i.e., prefers being alone; does not enjoy very much; lacks energy; shy or timid), anxious depressive (i.e., frequently crying; feels unloved, worthless; worries), and somatic complaints (i.e., nightmares; constipation; headaches; tired). Our previous examinations of Latina adolescents have shown direct relationships from internalizing behaviors to suicide attempts and from mother-daughter mutuality to suicide attempts [9, 20]. However, these analyses did not disentangle how the three subcategories of internalizing behaviors could mediate the relationship between mother-daughter mutuality and suicide attempts.

In this paper, we explore the relationships between Hispanic cultural involvement, mother-daughter mutuality, three subcategories of internalizing behaviors (i.e., withdrawn depressive, anxious depressive, and somatic complaints), and suicide attempts in adolescent Latinas. We hypothesize that girls reporting higher involvement in the Hispanic culture will have more mutuality with their mothers and that girls with higher mutuality with their mothers will present lower levels of internalizing behaviors and suicide attempts. We also explore which of the three subcategories of internalizing behaviors is the most salient predictor of suicide attempts in our sample.

2. Method

2.1. Participants and Sampling Design. The data for our analyses come from a cross-sectional study on the sociocultural processes of Latina adolescent suicide attempts. We recruited 122 adolescent Latinas living in New York City who had reported making a suicide attempt in the past 6 months before an interview with our research team. As comparison group, we recruited 110 adolescent Latinas with similar demographic characteristics but with no history of suicide attempts. Suicide attempters were recruited from local hospitals and social service agencies, and comparison group participants were recruited from health and social service agencies in the same communities.

A suicide attempt was defined as any intentional non-fatal self-injury, no matter how medically lethal, reported by the participant to a friend, teacher, medical staff, or mental health clinician immediately after the attempt was made [21]. Adolescents were excluded from the study if they were outside the study age range (11–19 years old at the time of the interview) or if they were diagnosed with mental retardation or some other serious mental health problem (e.g., schizophrenia). All suicide attempters were cleared for participation by a mental health clinician in order to protect the participants from any psychological harm in the subject matter of the study. Both the assent of the adolescent participants and the consent of one parent were required of all participants. Bilingual and bicultural Master's level clinicians, who were all female, conducted all interviews with the adolescent Latinas. The Human Research Protection Office of Washington University in St. Louis approved all procedures for this study.

2.2. Measures

2.2.1. Demographic and Cultural Covariates. In this model, demographic data included the girl age at the time of the interview, and the parent educational level (used as a proxy for socioeconomic status). Cultural covariates included the specific Hispanic cultural group(s), with which the adolescents identified, and the girls level of acculturation, as measured by the Bidimensional Acculturation Scale (BAS) [22], which taps both Hispanic and US cultural involvement in two subscales. Both subscales have scores that range from 1 to 4; values over 2.5 are considered "high" for the measured cultural involvement domain [22]. In this sample, the internal consistency alpha for the Hispanic cultural involvement subscale was .90 and .83 for the US cultural involvement subscale.

2.2.2. Mother-Daughter Mutuality. We used the Mutual Psychological Development Questionnaire (MPDQ) [15] to measure how attuned girls felt with their mothers. The 22-item scale includes items that assess the relationship across 6 dimensions: (a) empathy, (b) engagement, (c) authenticity, (d) diversity, (e) empowerment, and (f) zest [15]. The total score is the mean score across the items with a score of 1 indicating low mutuality and a score of 6 indicating high mutuality. The internal consistency alpha for the MPDQ reported by the adolescent girls was .88.

2.2.3. *Psychopathology Variables.* The adolescents reported their internalizing behaviors using the Youth Self-Report [23], which consists of three subscales (e.g., withdrawn-depressive behaviors, anxious-depressive behaviors, and somatic complaints). Scores ranged from 0 to 16 for withdrawn-depressive behaviors, 0 to 19 for anxious-depressive behaviors, and 0 to 25 for somatic complaints. Higher scores indicated more of the measured behaviors. Coefficient alphas for withdrawn-depressive behaviors, anxious-depressive behaviors, and somatic complaints were, respectively, .76, .87, and .79 for our entire sample.

2.2.4. *Suicide Attempter Status.* Participants who reported a suicide attempt in the past 6 months before the interview were identified as suicide attempters for all analyses, and those with no reported lifetime history of suicide attempts were classified as nonattempters.

3. Data Analytic Strategy

3.1. *Path Analysis.* After examining bivariate relationships between attempters and Nonattempters and across all other study variables, we used path analysis to test our hypothesized path between the constructs of our study. Using path analysis, we were able to test both direct (i.e., the relationship between the adolescent Hispanic cultural involvement and mother-daughter mutuality) and indirect relationships (i.e., the indirect relationship between the adolescent Hispanic cultural involvement and the internalizing behaviors subscales, mediated by mother-daughter mutuality). We performed the mediating models in Mplus 5.1 [24], using a weighted least squares estimator which allowed for the calculation of both direct and indirect effects of model variables (e.g., mutuality and internalizing behaviors) on the outcome variable. This estimator also produces coefficients that can be interpreted like beta coefficients with continuous outcome variables and probit coefficients with binary outcomes. Model fit was evaluated according to the guidelines presented by Hu and Bentler [25] for the four indicators of model fit: Comparative Fit Index (CFI), Tucker Lewis Index (TLI), Chi Square, and the Root Mean Square Error of Approximation (RMSEA).

Although our data set had minimal missingness, with more than 90% of the cases having complete data across all the variables used in the analyses, we handled missing data with multiple imputation, as supported by Collins et al. [26]. This strategy is shown to reduce bias better than other methods of dealing with missing data, including mean substitution and casewise deletion and works especially well in models with few missing data, as is our case. The majority of the 10% of the missing data was attributed to the parent education level variable, which was only given by parents who were present at the time of the girl interview. We generated 10 imputed data sets using the ICE command created for STATA by Royston [27], taking into account not only variables included in our model but other variables that could be associated with variables in our model (e.g., public or private insurance) or social desirability. The imputed

TABLE 1: Description of adolescent suicide attempters ($N = 122$) and Nonattempters ($N = 110$).

Variable	All adolescents M(SD)/ N (%)	Attempters M(SD)/ N (%)	Non attempter M(SD)/ N (%)	$P \leq$
Age	15.5 (2.0)	15.3 (1.8)	15.6 (2.3)	.814
Parent education	10.6 (3.7)	10.2 (3.8)	11.0 (3.5)	.148
Hispanic group				
Puerto Rican	82 (35.3%)	44 (36.1%)	38 (34.6%)	.809
Dominican	64 (27.6%)	38 (31.5%)	26 (23.6%)	.505
Mexican	27 (11.6%)	17 (13.9%)	10 (9.1%)	.178
Colombian	23 (9.9%)	5 (4.0%)	18 (16.4%)	.007
Other	36 (15.5%)	20 (16.4%)	16 (14.5%)	.505
Hispanic cultural involvement	2.9 (0.7)	2.9 (0.7)	2.9 (0.6)	.697
US cultural involvement	3.6 (0.5)	3.5 (0.5)	3.6 (0.4)	.851
Mother-daughter mutuality	4.2 (0.9)	3.9 (0.9)	4.4 (0.8)	.001
Withdrawn depressive	5.9 (3.4)	7.4 (3.1)	4.4 (3.0)	.001
Anxious depressive	8.2 (5.6)	10.7 (5.6)	5.6 (4.2)	.001
Somatic complaints	6.3 (4.0)	7.7 (4.1)	4.9 (3.1)	.001

datasets were then analyzed in Mplus [24], using the TYPE = IMPUTED command.

4. Results

4.1. *Demographics and Bivariate Analyses.* Our sample was comprised of 122 (52.6%) adolescent Latinas, who had reported attempting suicide and 110 (47.4%) who had no history of a suicide attempt. Their ages at the time of the interview ranged from 11 to 19 years old ($M = 15.5$, $SD = 2.0$). The range of formal education completed by the parents of the adolescents was from 1 to over 17 years, with the average being 10.6 ($SD = 3.7$) years.

Most girls identified with one single Hispanic cultural group: Puerto Rican ($n = 82$, 35.3%), Dominican ($n = 64$, 27.6%), Mexican ($n = 27$, 11.6%), Colombian ($n = 23$, 9.9%), and one each from Cuba, Ecuador, El Salvador, Honduras, Nicaragua, and Venezuela. The remaining 30 (12.93%) girls identified with multiple Hispanic cultures, corresponding with the respective cultures of their parents. On acculturation variables, all girls in the sample scored 2.9 ($SD = .07$) out of 5 points possible for Hispanic cultural involvement and slightly higher ($M = 3.6$, $SD = .03$) for US cultural involvement. Details of the sample are provided in Table 1.

TABLE 2: Pearson's correlation coefficients between study variables.

	1	2	3	4	5	6	7	8	9
(1) Attempter status	—								
(2) Mutuality	-.28*	—							
(3) Withdrawn depressive	-.45*	-.33*	—						
(4) Anxious depressive	.46*	-.39*	.70*	—					
(5) Somatic	.36*	-.24*	.45*	.61*	—				
(6) Hisp. cultural involvement	-.02	.21	.01	-.01	-.02	—			
(7) US cultural involvement	-.07	-.12	-.12	-.10	.06	-.49*	—		
(8) Age	-.07	-.02	-.04	-.09	-.14	.11	-.13	—	
(9) Parent education	-.13	-.02	-.17	-.07	.02	-.19	.20	-.05	—

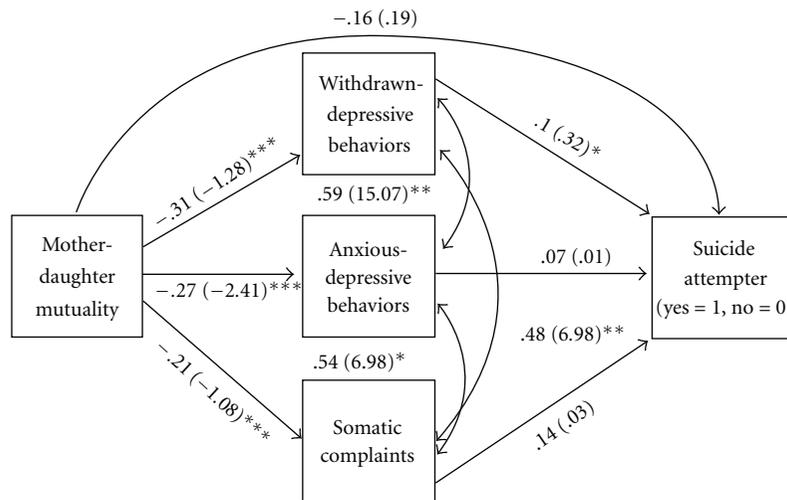


FIGURE 1: Results of mediation analysis. Note. Standardized coefficients are listed on the model paths, followed by unstandardized coefficients in parentheses. Model fit indices: CFI = 1.0, TLI = 1.0, RMSEA < .001. Results for covariates were not significant and are not shown. * $P < .05$, ** $P < .01$, *** $P < .001$.

4.2. Bivariate Analyses. Suicide attempters and Nonattempters showed no differences across nearly all demographic and acculturation variables, with the exception that significantly more Nonattempters identified as Colombian than did suicide attempters ($X = 7.5$; $P < .01$) (Table 1). This difference may have resulted from a sampling bias. Suicide attempters reported significantly lower mutuality with their mothers than did Nonattempters and also reported higher scores than did their Nonattempter counterparts on each of the three subscales for withdrawn-depressive behaviors, anxious/depressive behaviors, and somatic complaints (Table 1).

Correlations between the continuous variables and suicide attempter status are shown on Table 2. Attempt status was significantly related to mutuality, withdrawn-depressive behaviors, anxious-depressive behaviors, and somatic complaints. Mutuality showed a correlation with each of the subscales of internalizing behaviors: withdrawn-depressive behaviors, anxious-depressive behaviors, and somatic complaints. Finally, all three subscales of internalizing behaviors showed significant correlations amongst themselves: withdrawn-depressive behaviors with anxious-depressive behaviors and with somatic complaints, and anxious-depressive behaviors with somatic complaints.

4.3. Mediation Analyses. The mediation analyses were performed to test the hypothesized path from mutuality through psychopathology variables to suicide attempter status (Figure 1). Demographic and cultural covariates were also included in the mediation model, although their paths are not depicted in the figure for visual clarity. We report the standardized coefficients for the results of the mediation model in the text, which can be interpreted as one standard deviation increase in the outcome variable for each unit increase in the predictor variable; however, both standardized and unstandardized coefficients are presented in the results depicted on Figure 1 (unstandardized coefficients are shown in parentheses).

The final mediation model showed good model fit across the three indices we assessed (CFI = 1.00, TLI = 1.00, RMSEA < .001). Girls who reported higher Hispanic cultural involvement also reported higher mutuality with their mothers ($b = .23$; $P < .01$). Mother-daughter mutuality had a negative relationship with all three psychopathology variables: withdrawn-depressive behaviors ($b = -.31$, $P < .001$), anxious-depressive behaviors ($b = -.27$, $P < .01$), and somatic complaints ($b = -.21$, $P < .01$). However, the direct relationship between mother-daughter mutuality and

attempter status in the mediation model was not significant as it was in the bivariate analyses. Only withdrawn-depressive behaviors were significantly related to suicide attempter status in the path model ($b = .32, P < .05$), indicating that girls with higher withdrawn-depressive behaviors were more likely to be suicide attempters, controlling for the other anxious-depressive behaviors and somatic complaints. Neither age nor parent education level of the adolescent Latinas were related to any of the main study variables in the path model. No specific Hispanic cultural group had any significant relationship to any variable in the model, after adjusting for pairwise comparisons.

We tested for significant mediation paths using Sobel’s Test (Table 3) to test if mother-daughter mutuality mediated the relationship between Hispanic cultural involvement and any internalizing behaviors subscale and to test if any internalizing behavior subscale mediated the relationship between mutuality and suicide attempter status. Mutuality mediated the effect of Hispanic cultural involvement on withdrawn-depressive behaviors ($Z = -2.41, P < .05$), anxious-depressive behaviors ($Z = -2.17, P < .05$), and somatic complaints ($Z = -2.15, P < .05$). Also, the withdrawn-depressive behaviors mediated the relationship between mutuality and suicide attempter status ($Z = -2.11, P < .05$).

5. Discussion

In this study, we set out to analyze a possible mechanism related to adolescents’ Hispanic cultural involvement, mother-daughter mutuality, and suicide attempts in Latina teens. Our results demonstrated that girls with higher involvement in Hispanic culture expressed more mutuality with their mothers and in turn lower levels of all three types of internalizing behaviors. We also found that girls who reported having more mutuality with their mothers had less internalizing behaviors, specifically less withdrawn-depressive behaviors, anxious-depressive behaviors, and somatic complaints. We also found that the withdrawn-depressive behaviors were significantly related to suicide attempts, mediating the relationship between mutuality and suicide attempts. Our research builds on past models exploring relational, psychological, and cultural variables involved in the suicide attempts of adolescent Latinas [14, 15] by examining specific pathways from adolescent’s Hispanic cultural involvement and mother-daughter relationships to suicide attempts through psychological behaviors.

The girls in our sample that had a higher Hispanic cultural involvement reported higher mutuality with their mothers. Our findings highlight the positive effect that Latino cultural values have in the relationship between Latina adolescents and their mothers. Among Latina teens, when the relationship with their mothers is strained due to their developmental changes [10] and cultural difference [11], Latino culture involvement may play a role in promoting positive family interactions. In our sample, even when culture was not directly related to the girls attempts [9], it had a direct effect on the mutuality between the adolescents and their mothers. Overall, these findings provide additional support for the theoretical and conceptual discussions on the sociocultural

TABLE 3: Direct and indirect effects in the final path model.

Specific path	<i>a</i>	S.E. _{<i>a</i>}	<i>b</i>	S.E. _{<i>b</i>}	<i>Z</i>
Hisp. cultural involvement → mutuality → withdrawn-depressive behaviors	0.29	0.10	-1.28	0.27	-2.41*
Hisp. cultural involvement → mutuality → anxious-depressive behaviors	0.29	0.10	-2.41	0.71	-2.17*
Hisp. cultural involvement → mutuality → somatic complaints	0.29	0.10	-1.08	0.33	-2.15*
Mutuality → withdrawn-depressive behaviors → suicide attempt	-1.28	0.27	0.09	0.04	-2.11*

Note. *Z*-values are derived using the Sobel Test of indirect effects: $Z = ab/S.E.ab$, where *a* = coefficient from initial variable to mediating variable, *b* = coefficient from mediating variable to outcome variable, *ab* = indirect coefficient, S.E. = standard error, and $S.E.ab = \sqrt{(b^2 \times S.E.a^2) + (a^2 \times S.E.b^2)}$. * $P < .05$.

and developmental features of suicide attempts among Latinas [28, 29].

Other papers have shown that mutuality is directly related to suicide attempts [9] and that unspecified internalizing behaviors are predictors of suicidality [14, 20]. In this study, we find that the relationship between mutuality and suicide attempts is mediated by specific internalizing behaviors (i.e., withdrawn depressive). This offers further clarification on the pathway from family interactions to suicide attempts through mental health profiles.

Although research on adult Latino suicide attempters has found differences among Hispanic subgroups [30], our findings show that no specific Hispanic cultural group had any significant relationship to the variables included in our model. Furthermore, the differences in the rate of suicide attempts among Colombian participants can be explained by sampling issues.

5.1. Limitations and Implications. The generalizability of our findings is limited for a number of reasons. Our sample of adolescent Latinas was not drawn randomly, and all girls live in a larger urban area. Although we present our model as a path model, our data are cross-sectional, and all of the measures used were self-reported.

Our findings have implications for treatment and prevention of suicide attempts among Latina adolescents. As our results indicate that the suicide attempt incubates within problematic family interactions and relationships and as other family members play a part in influencing the context that set the conditions for the suicide attempt [31], we advocate

for family therapy as the first and primary line of treatment. The pressures of negotiating developmental processes and demands of two or more cultures suggest that treatment efforts could also target mother-daughter relationships, perhaps in the context of dyadic therapies. Family and dyadic therapies could enhance parent-adolescent communication by paying attention to reducing conflict, raising mutuality, and communicational quality among family members with different levels of Hispanic cultural involvement. Due to the complexities faced by Latino families negotiating multiple sociocultural systems, any of these interventions should allow for interventions with multiple sessions (>5 sessions). Individual therapy based on interpersonal theory and focused on internalizing behaviors can help Latina suicide attempters to gain problem-solving skills in interpersonal relations.

The literature has showed that traditional psychotherapy approaches promoting mainstream cultural values (e.g., individualism) may be in conflict with the values of ethnic minorities (e.g., familism) [32]. Our findings point to the importance of including Latino cultural values in the therapeutic approaches offered to Latino families and suicide attempters. The cultural tailoring of mental health treatments is needed to avoid polluting the therapeutic environment with conflictive culturally based beliefs. Moreover, the incorporation of Hispanic cultural values in family and dyadic therapies can help strengthen the members mutuality and fostering psychological wellbeing for the adolescents.

Preventive efforts should target Latino family's level of cultural dissonance by including parents and adolescents. These interventions should help young Latinas understand their development, acculturation pressures, and their parents cultural expectations. By engaging the parents, the interventions can help them understand their daughters development and cultural perspectives. Ultimately, primary prevention strategies involving Latino parents and adolescents can reduce intrafamilial levels of conflict and increase the level of mutuality and communication among family members, thus decreasing the likelihood of a suicide attempt.

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Review Article

Depression among Asian Americans: Review and Recommendations

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This article presents a review of the prevalence and manifestation of depression among Asian Americans and discusses some of the existing issues in the assessment and diagnosis of depression among Asian Americans. The authors point out the diversity and increasing numbers of Asian Americans and the need to provide better mental health services for this population. While the prevalence of depression among Asian Americans is lower than that among other ethnic/racial groups, Asian Americans receive treatment for depression less often and its quality is less adequate. In addition, the previous belief that Asians somatize depression may become obsolete as more evidence appears to support that Westerners may “psychologize” depression. The cultural validity of the current DSM-IV conceptualization of depression is questioned. In the course of the review, the theme of complexity emerges: the heterogeneity of ethnic Asian American groups, the multidimensionality of depression, and the intersectionality of multiple factors among depressed Asian Americans.

1. Introduction

The goal of this paper is to provide a review of the prevalence, manifestation, assessment, and diagnosis of depression among Asian Americans. Before the authors discuss these issues, they examine the current demographics of Asian Americans. The review reveals the complexity of depression among Asian Americans, as the disorder seems to be more multifaceted, and the population is more heterogeneous compared to previous conceptualizations of depression among Asian Americans in research and clinical practice. Finally, the authors provide recommendations for future research and practice by emphasizing the heterogeneity of Asian Americans, the multidimensionality of depression, and the intersectionality of various factors that may affect the experience of depression. The current review aims at contributing to the existing literature in several ways. First, there is a dearth of reviews of depression among Asian Americans, and the conducted empirical studies need to be reviewed using existing theoretical frameworks. Second, previous reviews concentrated on Asian American elderly only (e.g., [1]) or provided an extensive list of studies that

have been conducted with different age groups (e.g., [2]). Therefore, this review differs by focusing on the manifestation, assessment, and diagnosis of depression among Asian Americans. In addition, the overarching theme of this review is the complexity and multidimensionality of depression among Asian Americans. Lastly, this review not only attempts to combine theory and empirical findings, but also provides recommendations for future research and practice.

2. Demographics of Asian Americans

Asian Americans are the fastest-growing minority group in the United States [3]. According to the 2010 Census, Asian Americans number 14,674,252 individuals (4.8% of the US population), which represents a significant increase of 43% compared to the 2000 Census when Asian Americans numbered 10,242,998 (3.6% of the US population). In terms of subgroups, Chinese Americans make up the largest Asian group in the United States at 0.9% of the country's population, followed by Filipino Americans (0.7%), Asian

Indians (0.6%), Korean Americans (0.4%), and Japanese Americans (0.3%). For convenience, the US Census Bureau grouped Pacific Islanders together with Asian Americans, which resulted in a designation of Asian Pacific Islander Americans for this ethnic minority group. As of the 2000 Census, Pacific Islanders who are immigrants or descendants of immigrants from one of the Pacific Islands to the United States, including Hawaii, Samoa, Fiji, Guam, and the islands of Micronesia, were officially separated from the Asian Americans.

As noted above, some Asian groups such as the East Asians (Chinese, Japanese, and Korean) and Indians are economically and politically more powerful than the Southeast Asians such as the Vietnamese, Hmong, Cambodians, and Laotians. For example, as pointed out by Li and Wang [4] “in the 2000 US Census, the poverty rate for Asians as a whole is only 10%. However, when Asian Americans are broken down by ethnicity, there is a wide range of poverty rates, varying from 6% for Filipinos to 38% for Hmong, with Japanese at 10%, Chinese at 14%, Vietnamese at 16%, and Cambodians at 29%. For example, according to Census 2000, only 22.85% of Vietnamese Americans hold a bachelor degree or higher, as compared to Korean at 49.2%, Japanese at 41.9%, Filipino at 42%, Chinese at 51.6%, and Asian Indian at 63.8%” [4, page 7].

According to Census 2000, the term “Asian” refers to people having origins in any of the original peoples of the Far East, Southeast Asia, or the Indian subcontinent (e.g., Cambodia, China, India, Japan, Korea, Malaysia, Pakistan, the Philippine Islands, Thailand, and Vietnam). Asian groups are not limited to nationalities, but include ethnic terms, as well. When referring to Asian Americans in this article, we include both immigrants from Asian countries to the US (first generation) and Americans of Asian descent (second, third, or fourth generation). Studies of Asian populations will also be discussed because they may be relevant to first generation Asian Americans. The comparison group that is most often used is European Americans and refers to people who originated from any of the peoples of Europe, the Middle East, or North America.

3. Prevalence of Depression among Asian Americans

According to the World Health Organization (WHO), major depression is reported as the leading cause of disability worldwide and the fourth largest contributor to the global burden of disease [5]. Major depression is a chief public health problem, and it is projected to be the second largest contributor to global disease burden by 2020 [6]. The lifetime prevalence rates of depression among European Americans according to the Diagnostic Statistical Manual (DSM-IV) range from 10% to 25% for women and from 5% to 12% for men [7]. Depression has been identified in all countries and among all ethnic and racial groups that have been studied [8–10]. The ubiquity and the serious consequences of major depression call for prompt actions in increasing our

understanding of its etiology, phenomenology, assessment, diagnosis, and treatment.

Among Asians and Asian Americans, reports about the lifetime prevalence of depression vary. The Chinese American Psychiatric Epidemiological Study (CAPES) indicated a relatively low lifetime prevalence rate of major depressive disorder (6.9%) among Chinese Americans [11]. Takeuchi et al. [12] reported that 9.1% of Asian Americans in the National Latino and Asian American Study (NLAAS) endorsed any affective disorder in comparison to 17.9% of non-Latino Whites, 13.5% of Hispanics, and 10.8% of non-Hispanic Blacks in the National Comorbidity Study-Replication (NCS-R; [13]). However, other studies suggested that the prevalence of depression among Asian Americans is equivalent or greater than that among European Americans (e.g., [14]). Chang [15] suggested that while Asian Americans reported significantly lower rates of depression than European Americans, their rates were overall higher than their overseas Asian counterparts.

More recently, Jackson et al. [16] have examined the prevalence rates of major depressive episode (MDE) among the various racial/ethnic groups in the Collaborative Psychiatric Epidemiological Surveys (CPES), which included the NLAAS. The NLAAS sampled three Asian ethnic groups: Filipinos, Vietnamese, and Chinese, and a fourth group included Other Asian. According to Jackson et al., the Asian ethnic groups reported the lowest rates of lifetime MDE compared to all others (non-Latino Whites, Hispanics, Caribbean blacks, and African Americans), and Filipinos were the ethnic group with the lowest rate (7.2%). In addition, Jackson et al. compared the prevalence rates of MDE for US born and non-US born participants and consistently found that among the Asian ethnic groups non-US born participants reported lower prevalence rates. Specifically, the MDE prevalence rate for US born Chinese Americans was 21.5% as opposed to 7.7% for the non-US born Chinese Americans. In conclusion, Jackson and colleagues emphasized the need to examine the interactions of culture, race, ethnicity, and immigration in future depression research of diverse populations.

Kirmayer and Jarvis [17] provided a review of the cultural variations of prevalence, manifestation, mechanisms, and treatment of depression across different countries. Cross-national comparative community studies found that the prevalence of lifetime depression in Taiwan and Korea was 1.5% and 2.9%, respectively, as opposed to 5.2% in the United States [10]. The remarkably low prevalence rates in Taiwan and Korea may indicate differences in reporting of distress or possible protective effects of family and social support [17]. More recently, the International Consortium in Psychiatric Epidemiology examined data from 10 countries and found that Asian countries reported the lowest rates (3.0% in Japan) while Western countries reported the highest prevalence (16.9% in the United States; 15.7% in the Netherlands; [18]). One critique that Kirmayer and Jarvis made regarding the existing cross-national comparisons of prevalence rates was the existence of methodological issues in the studies. In particular, the instruments that were employed (e.g., the Composite International Diagnostic

Interview or the Diagnostic Interview Schedule) use specific probes and assess symptoms that have been already identified in the United States as criteria for depression. However, variations in context and in symptomatology may result in biased estimates of depression prevalence [19].

Yang and WonPat-Borja [2] provided an overview of depression among Asian American youth, adults, and elderly. The authors concluded that although adult studies indicate high levels of depressive symptoms, the prevalence of MDD among Asian Americans in community samples is moderate to low. In addition, they suggested that recent Chinese immigrants and outpatient Asian American girls have been at higher risk for MDD than other groups [20, 21]. Overall, the prevalence rates of depression among Asian Americans are higher than those among Asians in Asia, and researchers have speculated that the difference may be due to acculturative stress.

Regardless of the true prevalence of depression among Asian Americans, it has been established that once they have a mental disorder, it tends to be very persistent, and they are less likely to seek treatment for psychological problems than European Americans [22, 23]. Moreover, Alegría et al. [24] found that Asian Americans with a past-year depressive disorder were significantly less likely to access any depression treatment and to receive adequate care compared to non-Latino Whites. Thus, if Asian Americans suffer from depression, they may be less likely to have the disorder detected and treated, which may result in a worse prognosis [25].

4. Expression and Phenomenology of Depression among Asian Americans

The observed health disparities in depression treatment call for a closer examination of the manifestation and experience of depression among Asian Americans. The Western conceptualization of mental health relies on the notion of Cartesian dualism, considering the mind and the body as separate entities. The division of “psyche and soma” in Western medicine assumes that psychology and psychiatry deal with disorders of the mind and emotions while somatic medicine treats the body and its disorders [26]. However, this partition has proven to be quite controversial since all mental disorders according to the DSM [7] and ICD [27] classifications include somatic components. For instance, the current diagnosis of depression relies on both psychological and somatic symptoms. Interestingly, previous research implies that Westerners often describe depression in relation to concepts like guilt, individualism, decision-making, and self-control [28]. In addition, the affective aspect of depression has been suggested to receive more emphasis in North American samples than in Asian samples [29]. In contrast, Eastern experience of depression may reflect the integration of body and mind, which would explain the widespread occurrence of somatic symptoms in place of affective ones or the lack of differentiation between the two realms [30, 31].

The chief symptom in major depression in the West is considered to be sadness or depressed mood. However, in many societies people who suffer from major depression do not complain primarily of sadness. The symptoms that stand out for those people may be changes in appetite, headaches, backaches, stomachaches, insomnia, or fatigue [32]. Such symptoms and complaints would take people suffering from depression to their primary care doctor, and they may be less likely to be diagnosed with a mental disorder.

One of the proposed explanations for the emphasis on somatic symptoms among Asian Americans has been the holistic representation of mind and body. Support for this proposition has been found in previous research on depressive symptoms among Asian Americans that examined the factor structure of the Center for Epidemiological Studies Depression Scale (CES-D). The CES-D assesses four domains of depression: negative/depressed affect, positive affect, interpersonal problems, and somatic symptoms [33]. However, these dimensions do not always hold, and fewer factors often emerge among ethnic/racial minority populations [34–36]. For example, Edman et al. found that in a sample of Filipino American adolescents, only two factors provided a reasonably good fit: the first one included depressed affect, somatic complaints, and interpersonal problems and the second one consisted of the positive affect items. This finding implies that depressive symptoms may cluster in a different way among Asian Americans. In addition, Kanazawa et al. [37] investigated cultural variations in depressive symptoms among Native Hawaiians, Japanese Americans, and European Americans using the CES-D and found that Japanese Americans reported lower levels of positive affect compared to European Americans. This discrepancy was attributed to the differences in emotion regulation rather than in levels of depression. Additionally, Lu et al. [38] examined the CES-D in a sample of Hong Kong Chinese and Anglo American students. While the authors found support for four factors in both samples, they observed a tendency among the Chinese participants to report somatic symptoms and a tendency among Anglo Americans to report both somatic and affective symptoms. Furthermore, Lu and colleagues [38] concluded that American participants considered somatic and affective experiences as two different dimensions that comprise depression equally, and Chinese individuals were more likely to report their somatic symptoms, as opposed to their depressed feelings despite their awareness of the psychological problem. The observed tendency among the Chinese participants to concentrate on somatic symptoms is arguably more socially acceptable and may be related to the assumption that a cure can be found more easily for such complaints [38].

Despite the various explanations that have been proposed to elucidate somatization, researchers recently have offered an alternative hypothesis [29]. A recent study by Ryder and colleagues has explored depressive symptom presentations among Chinese and Euro-Canadian outpatients and concluded that the type of assessment (spontaneous problem report, symptom self-report questionnaire, or structured clinical interview) influenced the type and frequency of the symptoms that the patient reported. In this study,

Chinese outpatients were found to report more depressive somatic symptoms in spontaneous report and structured interviews while Euro-Canadian outpatients reported significantly more depressive affective symptoms (e.g., depressed mood, anhedonia, worthlessness, guilt) in all three assessment modalities. Based on their findings, Ryder and colleagues suggested that researchers may have spent too much time on discussing Chinese somatization of depression. Instead, they argued that it was more likely that Westerners overemphasized the affective or psychological aspects of depression compared to other cultures. This phenomenon is referred to as the “psychologization” of depression (Ryder et al.).

In support of this argument, Yang and WonPat-Borja’s [2] review of psychopathology among Asian Americans reiterated that among those who suffer from depression, somatic complaints go along with affective complaints as opposed to the previously held view that somatic complaints serve as a denial of affective symptoms. Interestingly, Chentsova-Dutton and colleagues have proposed the cultural norm hypothesis, which predicts that depression will decrease a person’s ability to react in a culturally appropriate way to positive and negative emotions [39, 40]. In support of this proposition, the researchers found that depressed European Americans had difficulty expressing sadness openly when watching a sad movie, while East Asians showed increased emotional reactivity (i.e., cried more) compared to nondepressed participants. These findings provide evidence that depressed East Asians express sadness affectively and not only somatically, as previously claimed.

5. Assessment and Diagnosis of Depression among Asian Americans

One of the debates in the field of cultural psychopathology relates to the universality of normality and pathology [41, 42]. Researchers reviewed empirical evidence on whether psychiatric disorders are etic (culture-universal phenomena) or emic (culture-specific phenomena). To illustrate this point with the case of depression, an etic view would assume that all people express depression similarly and universal diagnostic criteria can be applied without cultural biases. Conversely, an emic perspective of depression would claim that even if universal depressive symptoms existed, there is cultural variability in their expression [43, 44]. Moreover, cultural settings may define what is considered abnormal, the amount and the nature of the symptoms that are required for impairment, the course of the disorder, and the most appropriate treatment.

The DSM and ICD classification systems adopt a relatively etic or universal view of mental disorders because they minimize the role of culture in the diagnostic classification. At the same time, Fabrega [42] insisted that Western European psychiatric nosology may be ethnocentric because it reflects specific histories and cultures. The conceptualization of psychiatric illness and diagnosis indicates conventions about normality and abnormality of behavior, personhood,

social behavior, and nature of disease that emerged in a society. According to Fabrega, the DSM-IV employed language categories and epistemologies of scientific objectivism, which suggests universality of psychiatric disorders. However, these diagnostic categories ignored the consideration of symbolic personal characteristics, such as motives, intentions, social standing, power, spiritualism, values, ethics, and life goals. The minimization of such personal characteristics automatically assumes emphasis on the conceptualization of personhood in Western societies, which accentuates autonomy, voluntarism, and individualism (Fabrega). Yet, there is evidence to suggest that other characteristics of the self may be more valued in Asian cultures, such as interdependence, relatedness, and collectivism [45, 46]. Therefore, clinicians need to be cognizant of, and attend to, to the inherent cultural biases in our current psychiatric nosology, especially when diagnosing depressive disorders. In addition, it is worth noting that some of the DSM-IV symptoms are directly related to Judeo-Christian religious concerns with guilt, sin, sloth, despair, and worthlessness [47]. However, these presentations may not be equally applicable among Asians who may embrace different religions and societal norms.

Marsella [48, 49] proposed that one of the main cultural influences of depressive experience and disorder is the concept of personhood held by a particular cultural tradition. On one end of the continuum, cultures are characterized by individuated self-structures, abstract languages, and a lexical mode of experiencing reality. In such cultures, individuals have “objective epistemic orientation,” express affective, existential, cognitive, and somatic symptoms, and experience an increased sense of isolation, detachment, and separation. In contrast, cultures at the other end of the continuum emphasize unindividuated self-structure, metaphorical language, and imagistic mode of experiencing reality. In these instances, individuals having “subjective epistemic orientation,” may express predominantly somatic symptoms and often experience depression in somatic and interpersonal domains encouraged by their society. To illustrate this, Western cultures value individuality and responsibility and often the associated depressive symptoms are related to the loss of personal control expressed in helplessness and powerlessness. On the other hand, in certain Eastern Asian (e.g., Chinese, Japanese, and Korean) societies, there is a strong emphasis on selfless subordination, and the loss of control does not have such a negative connotation, which may lead to different manifestation of depression, in which helplessness is not expressed as a symptom.

The assessment of depression among Asians and Asian Americans for research purposes has to be conducted using primarily self-report measures and structured or semi-structured clinical interviews. Leong et al. [50] provided a review of the existing literature examining self-report measures of depression in East Asia. The authors noted that many researchers attempted to explain diverging patterns of depressive symptomatology based on results from Western instruments of depression. In particular, they criticized the lack of studies to test the reliability and validity of the Western questionnaires when used with Asians. While Leong et al. [50] concluded that the existing Western depression

measures are adequate instruments for the assessment of depression, they also suggested that applying the current Western ethnocentric conceptualization of depression to other racial and ethnic groups and cultures result in missing expressions of depression that are culture specific and unique to Asians.

6. Recommendations

After reviewing the prevalence, manifestation, assessment, and diagnosis of depression among Asian Americans, we would like to provide recommendations for future research and clinical practice. The overarching theme of our recommendations is the complexity of this topic and the need to recognize it and understand it. In particular, we will concentrate on three areas that present the intricacy of understanding depression among Asian Americans: (1) the heterogeneity present between and within ethnic Asian groups and the associated sampling problems, (2) the multidimensionality of depression, and (3) the intersectionality, or complicated interactions between various factors, such as gender, race, ethnicity, immigration, acculturation, language proficiency, and socioeconomic status among depressed Asian Americans.

6.1. Heterogeneity and Sampling Problems with Asian Americans. As mentioned earlier, Asian Americans constitute a very heterogeneous group and this presents a unique methodological challenge in conducting clinical research with this population. Due to the geographical distribution of Asian Americans in this country, it is quite challenging for researchers to find representative and adequate sample sizes when conducting research with Asian Americans. Outside of the major states of California and New York, obtaining samples of Asian Americans for clinical studies is akin to sampling rare events. Hence, it is quite difficult to satisfy the traditional research criteria of using random sampling techniques in order to achieve a representative sample that would allow for the greatest generalizability of the findings. As Sue et al. [51] have noted, the difficulty of this problem of sampling rare events and finding adequate sample sizes has caused some researchers to collapse ethnic categories among the races, which in turn creates methodological problems that limit the interpretation and generalizability of research findings. Sue et al. [51] further noted that this practice is common in studies of Asian and Pacific Islander Americans, which comprise of highly heterogeneous and diverse groups of people from Asia and the Pacific. Sue et al. [51, page 62] issued the following warning regarding improper sampling: “By considering the Asian and Pacific Islander Americans as a homogeneous group, we ignore sociohistorical, cultural, economic, and political diversity”. In addition to collapsing across heterogeneous groups, small subpopulation sizes also encourage researchers to resort to using convenience samples when conducting research with racial and ethnic minority groups [51]. Such samples suffer from the lack of representativeness, which in turn severely restricts the generalizability of the findings.

Such overdependence on convenience samples can be problematic. For example, studies with convenience samples can significantly skew the results of meta-analyses, which attempt to examine the cumulative effects of our research in any particular domain. It may be useful for such meta-analytic studies to monitor, compute, and address the issue of convenience sampling in addition to the “file drawer” problem. Moreover, there has also been a pattern of many of these studies of depression to be conducted among college and university samples rather than community and clinical samples.

Furthermore, there is also the problem of the politics of numbers such that the larger racial and ethnic minority groups have tended to receive most of the research attention. For example, in the Epidemiological Catchment Area (ECA) studies funded by the National Institute of Mental Health (NIMH), African Americans were oversampled but not Asian Americans. It was not until several decades later that the NIMH finally funded epidemiological studies, such as the National Latino Asian American Study (NLAAS). This pattern was probably also influenced by the stereotype of Asian Americans as the “model minority” who are viewed as highly successful in terms of educational achievement, economic attainment, and psychological adaptation in the United States (see [4]).

Therefore, it is important for researchers conducting studies of depression among Asian Americans to be aware of this heterogeneity problem. Given the difficulty of obtaining adequate samples of Asian Americans, especially clinical samples, it is expected that studies will continue to consist of various subgroups (e.g., Chinese, Japanese, Filipino) combined together to provide adequate power for statistical analysis. However, it would be important to provide information about the various subgroups that have been combined in the study. A study consisting primarily of Vietnamese Americans will have different implications than one consisting primarily of Asian Indians. In addition, where possible, studies of specific Asian American subgroups (e.g., Chinese or Japanese Americans) should also be carried out when such samples can be obtained in significant numbers. Requiring only specific Asian subgroup studies to be published in journals would significantly hamper the field while not conducting specific subgroup studies, where possible, would also slow our progress. For now, it will require both the aggregated and disaggregated studies of depression among Asian Americans to help us advance the field.

Owing to the difficulties of obtaining adequate and representative samples for cross-cultural clinical research, it appears that the secondary analysis of archival dataset is increasing in frequency. Secondary analysis of archival clinical data offers an additional strategy for conducting studies of depression among Asian Americans. For example, the recent release of the NLAAS dataset to the scientific community for secondary analysis has resulted in a rise of clinical studies on Asian American mental health, including studies of depression. Perhaps related to this trend, the American Psychological Association has recently published a book on the method of secondary data analysis [52]. In addition, the value of this approach has also been recognized by various

National Institute of Health (NIH) agencies, which have started funding secondary data analysis studies. Given the sampling problems discussed above, the use of secondary analysis of clinical data may well be an important alternative approach. If the NLAAS dataset is representative of this trend in secondary analysis, it would, therefore, be important for NIH to continue to fund these large national studies of racial and ethnic minority mental health, which can then be released to the scientific community for secondary analysis.

6.2. Depression as a Multidimensional Construct. One of the major problems with ethnocultural variations of depressive disorders is evident in the measurement of depressive experiences. The existing assessments of depressive symptoms may have limited cultural validity, and this may reduce their clinical utility in non-Western populations [53]. The symptoms of major depression that are described by the DSM-IV and measured by clinicians may not be equally culturally sensitive to depressive experience (i.e., may be endorsed differently) in all populations. Therefore, Marsella [28, 48] proposed to measure depression based on five different dimensions: affective, somatic, interpersonal, cognitive, and existential. According to Marsella, all of these components are present in the depression diagnosis. Yet, in Western culture more attention may be placed on affective and existential symptoms (e.g., depressed mood, discouragement, hopelessness), while non-Western populations may be more likely to experience dysfunction through somatic symptoms (e.g., loss of appetite, sleep problems). To illustrate this, Marsella et al. [54] used factor analysis to explore the expression of depressive symptoms among Japanese, Chinese, and European Americans. The authors found different depressive symptom profiles among the three groups: the Chinese Americans were more likely to emphasize somatic complaints (e.g., headaches, insomnia, and indigestion), the Japanese Americans experienced more interpersonal problems (e.g., afraid to meet new people, does not feel like socializing, and feels ashamed), and the European Americans reported more affective and existential symptoms (e.g., loss of interest in life, hopelessness, depressed mood, suicidality, and memory problems). In addition, the authors found that Chinese and Japanese participants differed from European American participants by reporting poor appetite more often, while European American participants endorsed the urge to eat more frequently than the participants of Asian descent. The findings of this study suggested that various ethnic/racial groups may experience depression in different ways. Therefore, embracing a multidimensional framework to examine the different symptoms of depression and their endorsement and relevance to individuals from various ethnic and racial groups will be an important next step. Learning more about the experience and manifestation of depression across ethnic and racial groups will help us assess, diagnose, and treat depression more effectively.

6.3. Intersectionality. As we advance our understanding of the complexity of depression among Asian Americans, we need to consider the effect of other factors, such as gender,

acculturation, and language that may influence the manifestation, assessment, diagnosis, and treatment of depression. In particular, the study of intersectionality deals with the “analytic approaches that simultaneously consider the meaning and consequences of multiple categories of identity, difference and disadvantage” [55, page 170].

A few studies concentrated on Asian American women’s experience of depression. In a qualitative study of symptom manifestation among Korean immigrant women in the US, Bernstein et al. [56, page 393] found that report of depressive symptoms was complex and in all domains of the person’s existence. Some of the topics discussed were “emotional entrapment, shame and failure as women, disappointment at not being able to live a normal life, and emotional restraint”. Women were observed to express emotions more often somatically, bodily, and metaphorically than verbally (e.g., reports of aches and pains and weakness). In addition, women described their experience using the term “suffering” rather than “depression.” The authors explained these patterns with an emphasis on society (collectivism) in Korean culture, where the expression of negative affect may be socially unacceptable.

Another study examined the relationship among cultural group, depressive symptoms, and somatic symptoms among Japanese and Korean women [57]. The authors found a significant positive correlation between somatic symptoms and high depression scores on the Beck Depression Inventory (BDI) for both cultural groups. The most common endorsed somatic symptoms for both Japanese and Korean women with high BDI scores were abdominal upset, weakness, dizziness, aches and pains, and palpitations. The results of this study suggest that Asian women often tend to express depression in somatic symptoms. The two studies described here concentrated on the depressive experiences of Asian women, but little is known about depression among Asian and Asian American men. Therefore, it is important to investigate more thoroughly depression among Asian American men and women.

Other important factors that may be associated with the expression of depressive symptoms among Asian Americans are acculturation and language. For instance, Chung et al. [20] found that in a primary care setting, 41.3% of Asian patients had depressive symptoms, but physicians identified only 23.6% of them as psychiatrically distressed. The authors concluded that it may be difficult for primary care physicians to recognize depressive symptoms and to give an accurate diagnosis to patients who have low acculturation levels and/or are of Asian ancestry [20]. Similarly, acculturative stress has been positively related to higher rates of depressive symptoms among six groups of Asian immigrant elders (Chinese, Korean, Indian, Filipino, Vietnamese, and Japanese; [58]). In addition, English language proficiency plays an important role in communicating one’s symptoms and is an integral part of acculturation [59]. Kim et al. [60] examined the relationship of English proficiency and depressive symptoms in a sample of Chinese American adolescents. The authors found that self-reported low English proficiency in middle school was related to later reporting of accented English in high school, which, in turn, related to their perception of

being labeled as perpetual foreigners. Both boys and girls who internalized the perpetual foreigner stereotype experienced more discrimination and reported more depressive symptoms than the adolescents who did not identify as perpetual foreigners. While this study provided insight into the relationship between English proficiency and depression, the role that English proficiency might play in the expression of depressive symptoms among Asian Americans needs to be examined.

In conclusion, it is important to note that the findings reviewed in this paper are based mostly on Asian and European samples from North America. Therefore, their generalizability is limited to this geographical area and their international applicability needs to be examined with caution. The recognition and further exploration of the existing heterogeneity among Asian Americans, the multidimensionality of depression, and the intersectionality of other important variables, such as gender, acculturation, and language seem to be logical next steps for the advancement of our understanding of depression among Asian Americans. Continuing research on separate ethnic Asian groups as opposed to grouping all Asian Americans together may allow us to note similarities and differences in depression between ethnic groups. At the same time, examining depression as a multidimensional construct that consists of various symptoms, as opposed to concentrating on the affective aspect of depression may improve our diagnosis and treatment of depression among Asian Americans. Lastly, considering other variables that play an important role in a person's life and may affect their perceptions of the environment and others, such as gender ability to acculturate and to speak English may prove to be crucial in the assessment, diagnosis, and treatment of depression among Asian Americans.

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Research Article

Mental Health Treatment Involvement and Religious Coping among African American, Hispanic, and White Veterans of the Wars of Iraq and Afghanistan

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Although racial/ethnic differences have been found in the use of mental health services for depression in the general population, research among Veterans has produced mixed results. This study examined racial/ethnic differences in the use of mental health services among 148 Operation Enduring/Iraqi Freedom (OEF/OIF) Veterans with high levels of depression and posttraumatic stress disorder (PTSD) symptoms and evaluated whether religious coping affected service use. No differences between African American, Hispanic, and Non-Hispanic white Veterans were found in use of secular mental health services or religious counseling. Women Veterans were more likely than men to seek secular treatment. After controlling for PTSD symptoms, depression symptom level was a significant predictor of psychotherapy attendance but not medication treatment. African American Veterans reported higher levels of religious coping than whites. Religious coping was associated with participation in religious counseling, but not secular mental health services.

1. Introduction

Research indicates that African Americans and Hispanics underutilize mental health services compared with Non-Hispanic whites. According to the National Comorbidity Survey (NCS) and the National Comorbidity Survey-Replication (NCS-R), among those with a mental disorder, African Americans are half as likely as whites to receive psychiatric treatment when controlling for the severity of the disorder [1]. African Americans are also less likely than other racial/ethnic groups to receive treatment for a mental disorder through specialty mental health or general medical services [2]. A recent review indicated that Hispanics, as compared to Non-Hispanic whites, also underutilize mental health services and are less likely to receive adequate mental health treatment [3].

Racial and ethnic differences in use of mental health services have also been shown for specific disorders, such as

depression. African Americans are less likely than whites to access mental health treatment for depression, and of those who receive treatment, African Americans are less likely than whites to receive adequate care [4, 5]. A recent national study found that Hispanics, compared to Non-Hispanic whites, were also less likely to receive mental health treatment for depression during the period from 2000–2002 [6].

Whereas data from general community samples have revealed differences in mental health service utilization between minorities and whites [1, 2, 6–8], research with US military Veterans has produced mixed findings regarding utilization rates, access to adequate care, and treatment adherence. A study that examined all mental health treatment (VA and outside treatment) found that minority Veterans underutilized outpatient mental health services relative to whites [9]. Rosenheck and Fontana [10] found that African American and Mexican-American Veterans were less likely than whites to use mental health services

outside of the VA. A study assessing outpatient care for depression at 14 VHA hospitals in the Northeast found that African-Americans, as compared with other Veterans, were less likely to receive adequate pharmacotherapy for depression [11]. Further, African American Veterans who received pharmacotherapy for bipolar disorder through the VA reported lower medication adherence than did whites [12]. In contrast to studies finding lower mental health service use among African Americans, a large study ($N = 41,412$) of Veterans newly diagnosed with a depressive disorder found that African Americans, as compared to whites, were more likely to receive guideline-compliant levels of psychotherapy through the VA [13]. Other studies have found no differences in the use of VA mental health services between minorities and whites [10, 14–17].

Of particular relevance are utilization rates of today's Veterans, who are undergoing multiple deployments and have high rates of mental disorders [18, 19]. Two recent studies examining mental health utilization rates among Operation Enduring Freedom and Operation Iraqi Freedom (OEF/OIF) Veterans did not find racial/ethnicity differences [16, 17]. However, these studies did not control for levels of depression and posttraumatic stress disorder (PTSD) symptoms, an indirect index of need for services. Analyses that include indicators of need have frequently demonstrated differences in utilization based on race or ethnicity [1, 5, 9]. In addition, Seal et al. [17] focused primarily on treatment for PTSD rather than for depression or other mental disorders. Given the high rates of both PTSD and depression among OEF/OIF Veterans [20, 21], mental health treatment research should consider both disorders.

Moreover, research examining the use of mental health services often does not assess the use of counseling through a pastor or other religious figure, which is notable, given that 30 percent of Americans surveyed about counseling preferences said they would rather use religious than nonreligious counseling [22]. In particular, people who report high levels of religious coping or religiosity (e.g., frequent prayer) may be more likely to seek religious counseling and less likely to seek secular mental health treatment when dealing with psychological difficulties. For example, people who attend church more often are more likely to prefer therapeutic help from ministers or church staff rather than specialized mental health providers [22, 23].

It follows that a large proportion of Veterans may prefer religious counseling over specialty mental health services at the VA. Nearly 30 percent of Operation Enduring Freedom/Operation Iraqi Freedom (OEF/OIF) Veterans believe that religious counseling would be more effective than conventional mental health counseling for their problems [24]. Because religious counselors may rarely refer their counsees to specialized mental health resources [25], the use of religious counseling may reduce the use of secular mental health services.

Race and/or ethnicity may be related to the use of religious counseling. Compared to whites, African Americans are more likely to find spiritual counseling acceptable and less likely to find prescription medication acceptable for the treatment of depression [26]. Traditionally, African

Americans have had limited access to formal mental health services compared to whites and may have preferred religious counseling, in part, because of reduced expense [27]. African American churches offer more mental health services than white churches [28]. A recent qualitative study suggests that African American culture has stressed self-reliance and religious coping as an alternative to specialized mental health treatment [29]. Similarly, Hispanic Americans often prefer to speak with a priest or member of the clergy rather than a psychologist or psychiatrist when they experience psychological problems, especially if they are acculturated toward a traditional Hispanic culture rather than American culture [30, 31]. Hispanic Veterans who were not currently using mental health services at the VA preferred to seek help from a priest or friend rather than conventional mental health providers when they experienced emotional distress [32].

Racial or ethnic differences have also been observed in religious coping, such as the use of prayer and finding comfort in one's religion. Compared to whites, African Americans consistently report higher use of positive religious coping (e.g., prayer, having faith in God) [33–37]. In addition, there is some evidence of greater religious coping among Hispanics as compared to non-Hispanic whites [36, 38, 39].

A number of studies indicate that religious coping and religiosity are associated with increased well-being, psychological recovery, and lower depression symptoms, regardless of race [33, 40–43]. In addition, reduced levels of depression and general psychopathology have been found among African Americans [44, 45] and war Veterans [46] who report greater use of religious coping or religious guidance in their daily life.

The current study expands upon the existing literature by examining racial/ethnicity differences in mental health service utilization among OEF/OIF Veterans after controlling for depression and PTSD symptom levels. The study also contributes to existing literature by examining racial/ethnic differences in the use of secular versus religious counseling and the role of religious coping on use of mental health services among OEF/OIF Veterans. Whereas one study of Vietnam Veterans [10] assessed racial/ethnic differences in use of religious counseling, no published studies of OEF/OIF Veterans have examined religious coping or use of religious counseling. Given a lack of previous research on religious variables among Veterans and mixed findings regarding racial/ethnic disparities in mental health service use, the following exploratory hypotheses were tested through secondary data analysis.

Hypothesis 1. Whites, as compared to African Americans or Hispanics, would be more likely to attend specialty mental health treatment.

Hypothesis 2. African Americans and Hispanics, compared to whites, would be more likely to seek religious counseling.

Hypothesis 3. Compared to whites, African American and Hispanic Veterans would report higher levels of religious coping.

Hypothesis 4. Higher levels of religious coping would be associated with increased likelihood of seeking religious counseling.

Hypothesis 5. Higher levels of religious coping would be associated with lower levels of specialty mental health treatment.

2. Methods

2.1. Participants. Secondary data analyses were conducted using preliminary data from OEF/OIF Veterans taking part in Project SERVE (Study Evaluating Returning Veterans' Experiences; PI: Morissette), an ongoing, longitudinal study of returning OEF/OIF Veterans. Veterans were recruited from the three main campuses of the Central Texas Veterans Health Care System (CTVHCS)—two medical centers and one large outpatient clinic. Eligible participants included OEF/OIF Veterans age 18 years or older who spoke English, were able to comprehend and complete the assessment battery and were willing to complete required follow-up assessments. Additionally, at the time of the baseline assessment, Veterans taking or discontinuing psychotropic medications needed to demonstrate medication stability, as indicated by (1) taking a prescribed selective serotonin reuptake inhibitor or monoamine oxidase inhibitor for more than three months; (2) taking a prescribed anxiolytic or beta-blocker for more than one month; or (3) more than one month medication discontinuation or “wash-out” for all medications. In keeping with medication stabilization, patients in psychotherapy were required to demonstrate stability as indicated by greater than three months in psychotherapy or at least one-month therapy “wash-out” (i.e., one month or more since last therapy session). These latter two criteria were instated to ensure that symptoms assessed during the baseline assessment were due to an underlying psychiatric condition and not due to the temporary effects of starting or stopping medications and/or psychotherapy. Participants were excluded if they had plans to relocate from the Central Texas catchment area within four months of starting the study; met criteria for a diagnosis of schizophrenia, another psychotic disorder, or bipolar disorder; reported current hallucinations or delusions; or reported current suicidal or homicidal risk that warranted crisis intervention. Participants were recruited through direct mailings, through advertising at enrollment sites and Veterans' service organizations, and through referral from VA primary care staff, mental health staff, and OEF/OIF coordinators. Recruitment efforts were directed toward obtaining a sample comprised of approximately 75% of participants with a current or lifetime psychiatric diagnosis and 25% with no diagnoses.

Data were available for 188 participants who had completed the baseline assessment for Project SERVE to date. Only participants who reported their racial/ethnic background as African American, Hispanic, or white (non-Hispanic) were retained for analyses in the current study. Participants who reported that they were Asian, Hawaiian/Pacific Islander, Native American, biracial (with the exception of Hispanic and white), or other were excluded

due to inadequate subsample size ($n = 17$). Also excluded from analyses were 3 participants who did not provide racial/ethnic information, 4 participants who did not provide information on the primary outcome measure (use of mental health services), 8 participants who did not complete either the Beck Depression Inventory-II (BDI-II [47]) or the Posttraumatic Stress Disorder Symptom Checklist-Military (PCL-M [48]), and 8 participants who had missing sociodemographic data (e.g., annual income). Participants who identified as both Hispanic and white ($n = 19$) were categorized as Hispanic. The final sample consisted of 148 OEF/OIF Veterans.

The composition of the final sample was as follows: 125 males (84.5%) and 23 females (15.5%); 78 Non-Hispanic whites (52.7%), 30 Non-Hispanic African Americans (20.3%), and 40 Hispanics (27.0%). The median annual income range for the sample was \$30,000–49,999. See Table 1 for sample characteristics.

2.2. Procedure. As part of the larger Project SERVE longitudinal study, participants were screened by telephone to determine initial eligibility and scheduled for a comprehensive baseline assessment. At the beginning of the baseline assessment, informed written consent was obtained. The baseline assessment lasted approximately five hours, after which final eligibility was confirmed. Participants were compensated for their time (\$60–75 plus \$5 for lunch).

2.3. Measures

2.3.1. Demographics. Participants completed a demographics questionnaire designed specifically for the study that assessed race/ethnicity, age, military service, years of education, hours worked per week in the past 3 months, and annual income in the last 12 months.

2.3.2. Treatment Involvement. A Treatment Involvement Form (TIF), a self-report measure created specifically for the study, assessed each participants' number of individual psychotherapy, group psychotherapy, religious counseling, and mental health medication management appointments during the past 4 months.

2.3.3. Beck Depression Inventory-II (BDI-II [47]). The BDI-II is a 21-item self-report measure that assesses the severity of depressive symptomatology. Items are rated on a scale from 0 to 3, with higher scores indicating greater symptom severity. The BDI-II was designed to be more compatible with the DSM-IV depression symptomatology and temporal criteria than the original BDI. The BDI-II has adequate criterion validity [49] and has demonstrated high levels of internal consistency (Cronbach's $\alpha = .91$) [50]. The BDI-II is an effective depression screening instrument among diverse racial and ethnic groups [51]. Internal consistency for the current study sample was Cronbach's $\alpha = .94$.

2.3.4. Posttraumatic Stress Disorder Symptom Checklist-Military Version (PCL-M [48]). The PCL-M is a 17-item

TABLE 1: Final sample characteristics.

Variable	Final sample ($N = 148$)		African Americans ($N = 30$)		Hispanics ($N = 40$)		Whites ($N = 78$)	
	M	SD	M	SD	M	SD	M	SD
Age	38.89	10.10	42.47	8.67	37.41	10.49	38.25	10.20
Years of education	14.28	2.51	14.00	2.36	14.15	2.84	14.46	2.40
Hours worked/weekpast 3 months	25.48	24.39	26.06	26.85	18.75	25.13	28.58	22.64
BDI-II	17.10	12.98	17.93	10.87	18.67	12.70	16.01	13.87
PCL-M	45.49	19.66	49.63	16.26	48.64	18.47	42.48	21.02

BDI-II: Beck Depression Inventory II; PCL-M: Posttraumatic Stress Disorder Checklist-Military Version.

self-report measure that assesses PTSD symptoms during the previous month among military servicemen and women. Subjects rate each item on a 5-point Likert scale ranging from 1 (“not at all”) to 5 (“extremely”), with higher score indicating greater symptom severity. Prior research has demonstrated test-retest reliability of .96 and .88, with test-retest intervals of 2-3 days and 1 week, respectively [52, 53]. The PCL is positively correlated with the Clinician Administered PTSD Scale for DSM-IV (CAPS) at .92 [52]. Using a cutoff score of 50 produces good sensitivity (.78) and specificity (.82) for a diagnosis of PTSD in the past month [54]. Internal consistency for the current sample was .97.

2.3.5. Brief COPE [55]. The Brief COPE assessed coping strategies participants used during the most recent four months when confronting stressful live events. The Brief Cope is a 28-item, shortened version of the original 60-item self-report COPE measure. The Brief COPE consists of 14 subscales, each comprised of two items. Carver [55] reported the following subscale alphas: active coping (.68), planning (.73), positive reframing (.64), acceptance (.57), humor (.73), religion (.82), using emotional support (.71), using instrumental support (.64), self-distraction (.71), denial (.54), venting (.50), substance use (.90), behavioral disengagement (.65), and self-blame (.69). Factor structures generated from the Brief COPE were similar to that of the full COPE. The full COPE has demonstrated good convergent and discriminant validity [56]. Internal consistency for the religious coping subscale in the current study sample was .88.

2.3.6. Mini-international Neuropsychiatric Interview (MINI [57]). The MINI is a brief clinical interview designed to screen for specific DSM-IV Axis I disorders. The MINI was used to screen for schizophrenia, schizoaffective disorder, and bipolar disorder for exclusionary criteria in this study. The MINI has good interrater and test-retest reliability, and convergent validity with the Structured Clinical Interview for DSM-III-R Patients (SCID-P) [58].

2.4. Statistical Analyses. Prior to testing hypotheses, simple unconditional analyses were conducted for African American, Hispanic, and white participants to obtain the treatment rate differences for the outcomes of participation in all secular mental health treatment, treatment with medication,

psychotherapy treatment (individual and group), and religious counseling. Treatment rate difference is provided to convey meaningful clinical information [59].

After obtaining the treatment rate differences, all hypotheses were tested using multiple logistic regression analyses with the exception of the third hypothesis, which was tested using multiple linear regression. In addition to racial/ethnic identity—the primary independent variable—age, gender, annual income, hours worked per week in the last three months, and years of education were included as covariates to statistically account for sociodemographic factors.

3. Results

One-way ANOVAs testing group differences for covariates revealed significant group differences for annual income level, $F(2, 145) = 5.04, P = .008$. Post hoc comparisons using the Tukey HSD test indicated that annual income was higher for white than for Hispanic participants at the .05 level of significance. All other comparisons were not significant. To determine if there were any differences between Hispanic participants who also identified as white ($n = 19$) and Hispanics who did not identify as white ($n = 21$), we conducted a series of t -tests. Comparisons indicated no significant differences on any predictor or outcome variables.

Of those who provided information on mental health treatment during the past four months, 50.7 percent reported using any specialty mental health services (individual or group psychotherapy or treatment with psychotropic medication) during the past four months. During that time period, 41.2 percent reported attending individual or group psychotherapy, 42.2 percent reported attending medication treatment, and 14.3 percent reported attending religious counseling. To characterize the sample, the treatment rate difference was obtained to compare the rates of treatment attendance between the racial/ethnic groups, whites versus African Americans and Hispanics, without controlling for symptom severity or sociodemographic characteristics (Table 2). Nonparametric tests of unconditional racial/ethnicity group differences were not significant for the use of any specialty mental health services [$\chi^2(2, N = 148) = 1.08, P = .58$], individual/group psychotherapy attendance, [$\chi^2(2, N = 148) = 0.92, P = .63$], medication treatment attendance, [$\chi^2(2, N = 147) = 1.36, P = .51$], or use of religious counseling, [$\chi^2(2, N = 147), 0.73, P = .69$].

TABLE 2: Mental health treatment rate differences by racial/ethnic group.

	Attended?		Total	Treatment rate	Treatment rate Difference (compared to white)
	Yes	No			
Any specialty mental health					
White	37	41	78	47.4%	
African American	15	15	30	50.0%	+2.6%
Hispanic	23	17	40	57.5%	+10.1%
Psychotherapy (individual/group)					
White	30	48	78	38.5%	
African American	12	18	30	40.0%	+1.5%
Hispanic	19	21	40	47.5%	+9.0%
Medication treatment					
White	29	48	77	37.7%	
African American	14	16	30	46.7%	+9.0%
Hispanic	19	21	40	47.5%	+9.8%
Religious counseling					
White	12	66	78	15.4%	
African American	5	25	30	16.7%	+1.3%
Hispanic	4	35	39	10.3%	-5.1%

TABLE 3: Logistic regression predicting any specialty mental health treatment attendance.

Predictor variable	P	Odds ratio (95% CI)
African Americans (N = 30)	.22	0.45 (0.13–1.62)
Hispanics (N = 40)	.90	1.07 (0.37–3.06)
Depression (BDI-II)	.12	1.05 (0.99–1.11)
PTSD (PCL-M)	.001***	1.07 (1.03–1.11)
Female (N = 23)	.009**	7.02 (1.63–30.35)
Age	.69	0.99 (0.94–1.04)
Years of education	.13	0.81 (0.63–1.06)
Hours worked per week	.79	1.00 (0.98–1.02)
Annual income	.33	1.22 (0.82–1.80)

CI: Confidence Interval.
*P < .05, **P < .01, ***P < .001.

A multiple logistic regression analysis was conducted to assess whether whites were more likely than either Blacks or Hispanics to attend any specialty mental health treatment (individual/group psychotherapy or medication treatment) when controlling for depressive and PTSD symptom severity and sociodemographic factors. All predictors were entered simultaneously. The overall model was significant [$\chi^2(9, N = 148) = 74.66, P < .001$], and the Hosmer-Lemeshow Goodness of Fit Test supported the model [$\chi^2(8, N = 148) = 5.08, P = .75$]. The model as a whole correctly classified 79.1% of cases. As shown in Table 3, there were no significant differences in odds of attending specialty mental health treatment as a function of race/ethnicity. However, female gender and higher PTSD symptomatology were associated with significantly higher odds of treatment attendance.

TABLE 4: Logistic regression predicting individual and group psychotherapy.

Predictor variable	P	Odds ratio (95% CI)
African Americans (N = 30)	.50	0.66 (0.20–2.20)
Hispanics (N = 40)	.79	1.15 (0.42–3.11)
Depression (BDI-II)	.01*	1.07 (1.02–1.13)
PTSD (PCL-M)	.005**	1.05 (1.01–1.08)
Female (N = 23)	.61	1.41 (0.38–5.25)
Age	.83	1.00 (0.95–1.04)
Years of education	.68	0.95 (0.75–1.20)
Hours worked per week	.54	1.00 (0.98–1.01)
Annual income	.51	1.13 (0.80–1.61)

CI: Confidence Interval.
*P < .05, **P < .01, ***P < .001.

A follow-up analysis was conducted to determine if there were racial/ethnic group differences in participation in individual/group psychotherapy. The overall model was significant [$\chi^2(9, N = 148) = 63.44, P < .001$], and the Hosmer-Lemeshow Goodness of Fit Test supported the model [$\chi^2(8, N = 148) = 3.53, P = .90$]. The model as a whole correctly classified 78.4% of cases. As shown in Table 4, higher depressive (OR = 1.07, 95% CI = 1.02–1.13) and PTSD (OR = 1.05, 95% CI = 1.01–1.08) symptoms were associated with significantly higher odds of attending individual/group psychotherapy.

A second follow-up analysis was conducted to examine potential differences in participation in mental health medication treatment. The overall model was significant [$\chi^2(9, N = 147) = 70.13, P < .001$], and the Hosmer-Lemeshow Goodness of Fit Test supported the model

TABLE 5: Logistic regression predicting medication treatment.

Predictor variable	<i>P</i>	Odds ratio (95% CI)
African Americans (<i>N</i> = 30)	.62	0.73 (0.21–2.52)
Hispanics (<i>N</i> = 40)	.86	1.10 (0.40–3.07)
Depression (BDI-II)	.62	1.01 (0.96–1.07)
PTSD (PCL-M)	.001***	1.08 (1.04–1.12)
Female (<i>N</i> = 23)	.004**	8.77 (2.00–38.60)
Age	.67	0.99 (0.94–1.04)
Years of education	.12	0.81 (0.61–1.06)
Hours worked per week	.71	1.00 (0.98–1.02)
Annual income	.25	1.26 (0.85–1.87)

CI: Confidence Interval.
 P* < .05, *P* < .01, ****P* < .001.

TABLE 6: Regression analysis summary for minority status as a predictor of religious coping.

Predictor variable	<i>B</i>	<i>SE</i>	<i>β</i>
African Americans	.63	.25	.23*
Hispanics	.24	.21	.10
Depression (BDI-II)	-.01	.01	-.07
PTSD (PCL-M)	-.01	.01	-.09
Female	.37	.26	.12
Age	.02	.01	.21*
Years of education	.06	.04	.13
Hours worked per week	.00	.00	-.01
Annual income	-.09	.08	-.12

$R^2 = .179$ (*N* = 148, *P* < .001).
 P* < .05, *P* < .01, ****P* < .001.

$[\chi^2(8, N = 148) = 6.40, P = .60]$. The model as a whole correctly classified 81.0% of cases. As shown in Table 5, higher PTSD symptoms and female gender were associated with significantly higher odds of attending medication treatment.

For the second hypothesis, a multiple logistic regression was performed to assess whether African Americans or Hispanics were more likely than whites to seek religious counseling from a priest, minister, or other religious figure when controlling for depression and posttraumatic stress symptom severity and sociodemographic variables. The full model containing all predictors was not statistically significant $[\chi^2(9, N = 147) = 7.20, P = .62]$.

To test the third hypothesis, a multiple linear regression analysis was performed to examine race/ethnicity as a predictor of religious coping. All predictors were entered simultaneously. The full model was statistically significant $[R^2 = .179, F(9, 138) = 3.33, P < .001]$. As hypothesized, African American racial status predicted higher levels of religious coping compared to white racial status (See Table 6). Greater age also was associated with higher levels of religious coping.

For the fourth hypothesis, a multiple logistic regression was conducted to assess whether religious coping was associated with increased likelihood of using religious counseling. The overall model was significant $[\chi^2(10, N = 147) = 20.48, P < .05]$ and was able to correctly

TABLE 7: Logistic regression with religious coping as a predictor of religious counseling attendance.

Predictor variable	<i>P</i>	Odds ratio (95% CI)
Religious coping	.001***	2.75 (1.49–5.07)
African Americans (<i>N</i> = 30)	.35	0.50 (0.12–2.10)
Hispanics (<i>N</i> = 39)	.21	0.41 (0.10–1.63)
Depression (BDI-II)	.21	1.04 (0.98–1.10)
PTSD (PCL-M)	.70	1.01 (0.97–1.05)
Female (<i>N</i> = 22)	.43	1.73 (0.44–6.82)
Age	.24	0.96 (0.90–1.03)
Years of education	.40	0.89 (0.67–1.17)
Hours worked per week	.89	1.00 (0.98–1.03)
Annual income	.77	1.07 (0.69–1.67)

P* < .05, *P* < .01, ****P* < .001.

TABLE 8: Logistic regression with religious coping as a predictor of use of specialty mental health treatment.

Predictor variable	<i>P</i>	Odds ratio (95% CI)
Religious coping	.13	0.71 (0.46–1.10)
African Americans (<i>N</i> = 30)	.37	0.55 (0.15–2.06)
Hispanics (<i>N</i> = 40)	.77	1.17 (0.40–3.44)
Depression (BDI-II)	.12	1.05 (0.99–1.11)
PTSD (PCL-M)	.001***	1.07 (1.03–1.11)
Female (<i>N</i> = 23)	.006**	8.06 (1.82–35.70)
Age	.96	1.00 (0.95–1.05)
Years of education	.21	0.84 (0.65–1.10)
Hours worked per week	.84	1.00 (0.98–1.02)
Annual income	.35	1.21 (0.81–1.80)

P* < .05, *P* < .01, ****P* < .001.

classify 86.4% of cases. A nonsignificant value was obtained from the Hosmer-Lemeshow Goodness of Fit test, providing support for the model's fit $[\chi^2(8, N = 147) = 9.74, P = .28]$. As seen in Table 7, higher levels of religious coping were associated with increased odds of seeking religious counseling.

For the fifth hypothesis, a logistic regression analysis was conducted to test whether higher levels of religious coping were associated with lower odds of participation in specialty mental health treatment. The full model produced a good fit $[\chi^2(10, N = 148) = 77.01, P < .001]$, was supported by a nonsignificant Hosmer-Lemeshow Goodness of Fit Test $[\chi^2(8, N = 148) = 8.11, P = .42]$, and correctly classified 80.4% of cases. As seen in Table 8, higher PTSD symptom severity and female gender were significantly associated with increased odds of attending specialty mental health care. However, religious coping was not a statistically significant predictor (*P* = .13), although the zero-order correlation between use of specialty mental health treatment and level of religious coping indicated a significant but weak inverse relationship $[r = -.20, P = .018]$. Participation in secular mental health treatment in religious counseling were not significantly related $[r = .06, P = .51]$.

4. Discussion

This study compared the use of mental health treatment among African Americans, Hispanic, and white OEF/OIF Veterans and evaluated whether differences in religious coping affected treatment involvement. Contrary to expectations, no significant differences were found as a function of race/ethnicity on the use of specialty mental health treatment—individual and/or group psychotherapy or medication treatment. Although these results are at odds with studies in the general population that found differences between whites and African Americans in use of mental health services [4, 5], they are consistent with results from several studies conducted within the VA that did not find differences in use of mental health services by whites and African Americans [10, 14, 15, 17]. Concerning the use of services by Hispanic Veterans, the current study's results are consistent with Rosenheck and Fontana [10], who found no differences between Hispanics and whites in the use of VA mental health services. Results lend support to the interpretation of Elhai et al. [14] that need for services appears to be a far stronger predictor than race or ethnicity of use of mental health services in the VA. Further, as suggested by Elhai et al. [14], young Veterans with disadvantaged socioeconomic status may not face the same problems as non-Veterans accessing mental health care because of the availability of VA services.

Consistent with studies of general community and college student samples, we found that women were more likely to seek specialty mental health treatment than men [60–62]. However, findings conflict with other VA studies that indicate that women Veterans are less likely than men to seek treatment within the VA [63, 64] or they are no more or less likely to use mental health services compared to men [65]. One explanation for discrepant results is that younger women Veterans who have served in OEF/OIF may be more comfortable using VA mental health services. Possible reasons for increased comfort include the growing percentage of women serving in the military and the VA's increased efforts to welcome women Veterans (e.g., by creating women's primary care clinics).

Interestingly, when psychotherapy and medication treatment were considered separately, female gender was positively associated with seeking medication treatment but not with psychotherapy attendance. However, the small number of women in our sample may have limited power to detect differences in follow-up analyses. After controlling for PTSD symptom level, depressive symptoms were a significant predictor in only one analysis: participation in psychotherapy. Thus, depression may be especially likely to lead people to seek out emotional support from others.

Contrary to the study's hypothesis, but consistent with Rosenheck and Fontana [10], data from the current study indicated that African Americans and Hispanics in the sample were not more likely than whites to seek religious counseling from a priest, minister, or religious figure. However, as predicted, African Americans reported higher levels of religious coping than whites. Results are consistent with previous research [33–37] and indicate that African American OEF/OIF Veterans reported greater use of prayer or meditation and finding comfort in religion when confronted

with stressful events. Contrary to expectations and previous findings [36, 38, 39], Hispanics did not report higher levels of religious coping than whites. Consistent with past research indicating increased religious involvement with age [66–68], we found that older age was associated with higher religious coping. In contrast to findings indicating greater religious coping and religiosity among women [35, 69], we did not find female gender to be a significant predictor.

As expected, the use of religious coping was positively associated with seeking spiritual counseling, but contrary to expectations, was unrelated to seeking specialty mental health services (i.e., treatment with medication or individual/group psychotherapy). Veterans who said that they frequently pray or meditate or find comfort in their religion in response to stressful events were more likely to seek counseling from a religious figure. This finding is consistent with research that indicates the frequency of church attendance is positively related to a preference for religious counseling [22, 23]. Although African American racial status was associated with higher levels of religious coping, it was not significantly associated with greater likelihood of seeking religious counseling. The finding that use of religious coping did not predict use of specialty mental health services may indicate that reliance on private religious practices does not reduce seeking psychotherapy or mental health medication treatment. Further, participation in religious counseling over the previous four months was unrelated to use of specialty mental health services in our sample, $r = .06$, $P > .05$.

5. Limitations and Strengths

One important limitation is that the study did not employ random sampling and, therefore, inferences cannot be drawn about the larger population of OEF/OIF Veterans. Generalizability was also limited somewhat by the study's exclusion criteria. To increase the generalizability of findings, future treatment utilization studies would benefit from inclusion of Veterans with psychotic disorders or bipolar disorder, those who are at imminent suicide risk, and those who are not yet stable on medication or in psychotherapy.

A further limitation is the use of secondary data analyses with a relatively small sample. Although we were able to detect racial/ethnicity differences in use of religious coping and gender differences in use of secular mental health services, future studies that include larger samples of OEF/OIF Veterans would allow for more powerful tests of possible racial/ethnic differences in treatment-seeking behavior. It should be noted that the SERVE project over-recruited Veterans with a history of psychiatric diagnoses, which enabled us to examine use of mental health services in a sample that had a high need for those services. We believe that these exploratory analyses are an important initial step toward determining how religious coping and race/ethnicity may impact the use of mental health services among OEF/OIF Veterans reporting relatively high levels of depression and PTSD symptoms.

Treatment involvement was reported via self report for the past four months rather than for lifetime use

of services. This shorter time frame may have increased the measure's reliability, and a fairly large percentage of the sample reported using specialty mental health services (51%). However, the use of a longer retrospective time period would likely have resulted in a larger percentage of the sample reporting treatment use. Moreover, future studies should compare findings based on self-report versus actual chart review of service use. Prospective studies of service utilization are indicated.

Finally, the religious coping subscale from the Brief COPE contains only two items associated with positive religious coping and, therefore, did not measure the full spectrum of religious coping, including attendance of religious services/functions. The inclusion of a more comprehensive measure in future studies would enable a more detailed examination of negative and positive aspects of religious coping.

6. Research and Clinical Implications

The failure to find race/ethnicity differences in the use of mental health services in a sample of relatively young Veterans is a positive sign and suggests that individuals who might otherwise have limited access to mental health services in the community are taking advantage of those services in the VA. To ensure that minority groups access mental health services at similar levels as whites, it may be important to understand the relative importance of factors contributing to minority members' decision to seek care in the VA. Similarly, the current study's finding of greater use of mental health services among female than male Veterans is encouraging given past findings of lower use by women. If women are, in fact, seeking out more VA mental health services than in the past, it would be valuable to understand what factors are associated with this change. Future studies should also examine whether symptom severity moderates the association between race/ethnicity and mental health service use.

The finding of higher religious coping among African American Veterans underlines the importance of assessing for religious coping and incorporating it into treatment plans, particularly when treating African Americans. It will be important for future research to determine whether treatment that incorporates religious practices and beliefs may be more acceptable to Veterans who report high levels of religious coping than treatment that focuses only on nonreligious behaviors and coping strategies. It may also be of value to examine the role religious coping plays by itself or in conjunction with evidence-based treatment in recovery from depression and traumatic events.

Disclosure

The views expressed in this paper are those of the authors and do not necessarily reflect the position or policy of the Department of Veterans Affairs or the United States government.

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Research Article

Health-Related Conditions and Depression in Elderly Mexican American and Non-Hispanic White Residents of a United States-Mexico Border County: Moderating Effects of Educational Attainment

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We investigated the prevalence of “high” levels of depressive symptomatology and 13 health-related medical conditions in elderly Mexican American (MA) and non-Hispanic white (NHW) residents of El Paso County, Texas. We analyzed the extent to which depressive symptoms in this population are associated with these conditions. Elderly MA residents possessed a higher prevalence of current depression, a relatively unique health-related condition profile, and were more likely to experience a set of conditions that impede participation in daily life—conditions that we found to be strongly associated with high depressive symptomatology in the elderly. After adjusting for educational attainment, using multiple regression analyses, depression was not associated with ethnicity and only six of the health related conditions showed significant differences between MA and NHW subjects. We believe these results provide an important insight into the mechanism of health-related conditions and depressive symptomatology in a large sample of elderly MAs; and how conditions typically attributed to MA ethnicity may in actuality be an artifact of socioeconomic status variables such as educational-attainment.

1. Introduction

Over the past 15 years or so a number of studies have investigated the prevalence of depression in Hispanic populations [1–22], along with comorbidity between depression and various types of health-related conditions [10, 17]. A number of authors feel that assessment of depression and comorbid diseases among elderly minority populations has been relatively neglected in the geriatric psychiatry literature [3, 10, 17, 23] and that this state of affairs specifically applies to Mexican American (MA) elderly populations, where depressive symptomatology and diseases such as diabetes are relatively common [24]. In actuality a fair number of such studies have been conducted, and we feel that attention should now be

focused on precisely what factors are associated with these differential ethnic findings. A salient issue for us involves the extent to which these previous findings may actually reflect life conditions associated with socioeconomic status (SES) per se rather than some yet to be determined ethnic or cultural trait. Comorbidity between depressive symptomatology and various types of health-related conditions does represent a crucial research problem because negative health outcomes, including untimely death, tend to be associated with depression [25–28]. The underlying factors behind these negative outcomes remain largely unknown. However, since ethnic groups as a whole may exhibit disparities at the level of income and education, important determinants of ethnic differences in rates of depressive symptomatology may

be linked to relatively independent factors associated with SES.

Rates of Depression and Hispanic Ethnicity. Prevalence rates for “high” depressive symptomatology among elderly Hispanic populations vary widely from study to study, from a high of 26.7% among elderly Hispanics residing in the Los Angeles area [21] to a low of 11.4% reported in the San Luis Valley Health and Aging Study [16]. However, virtually all Hispanic versus non-Hispanic white (NHW) comparisons reveal significantly higher rates of depression in the Hispanic population, including the well-known five-state Hispanic Established Populations for Epidemiologic Study of the Elderly (H-EPESE) [17].

Health-Related Conditions and Depression. The most thorough study of the relationship between self-reported health-related conditions and depression was published by Black and her colleagues [17]. However, because the H-EPESE sample did not include a NHW comparison sample, H-EPESE findings were compared with those of the New Haven EPESE [29]. This methodology is quite legitimate because all EPESEs share a basic set of questions and all use multistage sampling. However it is not known to what extent regional differences in ethnic group location may influence comparative research findings. More recently, Romero and her colleagues [10] evaluated the rates of depressive symptoms in Hispanic and NHW elderly residents of Bernalillo County, New Mexico and found higher rates of depressive symptoms in the Hispanic group. However, their logistic regression analyses found that these differences in depressive symptoms could largely be explained by education and income differences between the two groups.

We intend to enhance this line of research by presenting research findings from a comparative sample of MA and NHW elderly residents of El Paso County, Texas. We assessed prevalence rates for “high” depression and 13 health-related conditions in a residential population of elderly MA and NHW respondents. We then compared the two ethnic groupings by calculating odds ratios (OR) for the probability of finding these conditions among the MA versus NHW elderly. Finally, we conducted a series of logistic regression analyses to ascertain the extent to which a SES variable (educational attainment) might modify our ethnic group findings.

El Paso County offers a unique opportunity for making MA versus NHW health comparisons, especially where issues related to (SES) are at stake. In no El Paso County census tract do MAs comprise a minority of the tract’s overall population. Although relatively poor (25.2% of El Paso County’s 2009 population live below the official poverty line) [30] the fact that MAs comprise 81.8% of the County’s population [30] enables researchers to include a broader SES spectrum among MA household samples. Average years of formal schooling for the first four waves of the five southwestern state that H-EPESE sample was between 4 and 5 [31]. Although our sampling only increased this average by two years, fully 38% of our MA elderly sample possessed at least a high school degree [32].

2. Methods

2.1. Survey Participants. We interviewed a stratified random sample of 1,152 noninstitutionalized elderly (65 years and older) residents of El Paso County, Texas, in 2000-2001. This sample represents 84 percent of respondents originally contacted for interview. The survey instrument was translated into Spanish through backtranslation for accuracy. In-home interviews were conducted in Spanish or English depending on respondents’ preference. Twenty-four census tracts were randomly selected from 94 census tracts specified in the 1990 census after stratification for median income and ethnic composition. Specifically, eight census tracts were randomly selected from each of the lower, middle, and upper-middle income categories. Each of these 24 census tracts was screened through telephone interviews to identify households containing one or more members 65 years of age or older. We attempted to contact every house listed in the El Paso County Polk Directory for all 24 tracts. Up to five phone contacts were attempted for each listed household at staggered time intervals in order to develop our sampling frame. Screening interviews also provided demographic information including respondent’s age, gender, and self-reported ethnicity. Independent random sampling procedures were then established for MAs and NHWs. These procedures ensured virtually equal representation, within each of the three census tract income categories, of women and men, and age cohorts 65–74 and 74+.

Characteristics of the Sample. Specifically, comparative sample sizes for MAs and NHWs are 799 and 353, respectively. Mean and median ages for the entire sample were 74.9 and 74.0. Mean ethnic group ages are virtually identical (MA = 74.9, NHW = 75.0); percentage age 75 or higher (MA = 48.4, NHW = 51.0); percentage female (MA = 50.7, NHW = 49.9); percentage high-school graduate or higher (MA = 35.0, NHW 86.9); percentage above median household income for entire sample (MA = 23.9, NHW = 84.3); percentage with no medical insurance (MA = 38.4, NHW = 0.8). It should be noted that we compromised some degree of randomness in order to achieve better ethnic group balance in such factors as SES, “old” versus “old-old” age categories, and gender. It should also be noted that costs related to preliminary screening did not permit inclusion of households without telephones.

2.2. Assessment of Depression. Depressive symptomatology was measured with the CES-D (Center for Epidemiologic Studies Depression Scale) [33], the most widely used measure of depressive symptomatology among community-dwelling Hispanics, including MA residential populations [17]. This 20-item scale has been determined reliable for elderly respondents [34] and is predictive of current and future clinical depression [35]. Each item score can range from 0 to 3 depending on the frequency with which respondent has experienced a particular symptom during the past week. Scale scores can range from 0 through 60, and a score of 16 or above was set in this study as representing a higher

probability of depression [36]. A limitation of the CES-D is that it does not provide a diagnosis of depression but only measures severity of depressive symptoms. However, economic limitations of the study did not permit structured diagnostic interviews, and we thus chose a measure of depressive symptomatology that has been widely used with Hispanic populations, so that rate comparisons with previous studies would be meaningful.

2.3. Assessment of Health-Related Conditions. We assessed 13 health-related conditions. We asked respondents if, during the past three months, they had to cut down on things they usually do and/or if they have stayed in bed all or most of the day because of illness or injury. We also asked whether the respondent was usually troubled by shortness of breath when walking at an ordinary pace on level ground and/or whether she/he had a tremor or unusual slowness of movement where muscles have become unusually rigid, coupled with the problem of falling down when walking. Specific diseases were assessed by asking whether a doctor had told the respondent that he/she had a heart attack (coronary/myocardial infarction/coronary thrombosis), high blood pressure, diabetes (sugar in urine/high blood sugar), stroke, broken hip, cancer, or arthritis (rheumatism). We also ascertained whether each respondent had a urinary and/or bowel problem serious enough to keep him/her from doing some of the things they like to do (see Table 1). Self-reporting of medical conditions is a frequently used technique in epidemiological research. The validity of self-reports apparently depends on the quality of methodology and question wording [37]. In this case, the 13 health-related conditions were studied and our question wording is virtually identical to that used in the H-EPESE [17]. We should also note that these health-related conditions may or may not in themselves constitute causal agents; for example, cutting back on activities or being bedfast may well be resultants of other health-related conditions and diseases.

2.4. Assessment of Ethnicity. Ethnicity was defined through a combination of respondent's self selection and childhood and adolescent developmental history. This multifaceted procedure yielded a sample of 799 elderly MAs and 353 elderly NHWs: 414 MA respondents reported having been born in the U.S. and/or having lived in the U.S. until age 16, and/or having been reared mostly in the U.S.; 385 report being born in Mexico and/or living in Mexico until age 16 and/or mostly reared in Mexico. It is legitimate to place both of these groupings under the ethnic category, "MA". Nevertheless, this finding demonstrates some of the diversity within the Mexican American community itself (especially along the US-Mexico border) and the danger of using a simplistic self-identity measure of ethnic membership. We employed this methodology because of our interest in defining ethnicity in terms of actual life and acculturation experiences. We thus validated our ethnic group classification through a well-accepted Mexican acculturation scale [38]. As reported elsewhere [32], our ethnic categories are strongly correlated with this scale ($r = 0.86$).

2.5. Assessment of Educational Attainment. Education was measured by years of educational attainment, including ordinal categories for "high-school graduate," "college graduate," and "at least some post college education." A high school degree represents successful completion of 12 years of formal education after preschool, both in the U.S. and in Mexico. Educational attainment has been selected because of its importance to a number of mental health phenomena [32, 39].

2.6. Analyses. The prevalence rates for "high" levels of depressive symptoms (CES-D score of 16 or higher) were calculated for respondents with and without each health-related condition; the t -test statistic was utilized to ascertain statistical significance (Table 1). In addition, the "condition" of ethnicity (rates of high depression in persons with and without MA ethnicity) was analyzed with the t -test statistic (Table 1). The same procedure was repeated (Table 2) by comparing ethnic group mean scores for each condition. In order to economize on tabular presentations only significance levels for t -values have been reported. Odds ratios (OR) indicate the extent to which statistically significant findings are clinically meaningful (Tables 1 and 2). ORs depicted in Tables 1 and 2 have straightforward interpretations because each OR represents findings from a 2×2 table in which each measure has two response categories. Finally, we ran a series of direct (all predictors simultaneously enter into the equation) two-step logistic regression analyses (see Table 3). In Step 1 the analysis predicted "high" depression and each of the 13 conditions by MA versus NHW ethnicity. Findings for ethnicity, adjusting for respondent's educational attainment, were analyzed in Step 2. Logistic analysis is indicated for multivariate analysis when the dependent variable is dichotomous (e.g., high versus low depressive symptomatology) [39]. Logistic regression also permits a mixture of dichotomous and continuous variable predictors in the same equation. For us, this two-step analysis sheds light on the extent to which ethnic effects found in Table 2 are moderated by the inclusion of one important attribute of SES.

3. Results

3.1. Prevalence Findings: Entire Sample. Table 1 presents prevalence of "high" rates of depressive symptoms for MAs, NHWs, and for the total sample of respondents suffering from each health-related condition. In this study, El Paso's elderly MAs possessed a significantly ($P < 0.001$) greater rate of "high" depressive symptoms (13.3%) than did their NHW counterparts (5.2%). The odds for "high" depression among El Paso's MA elderly are almost three times ($OR = 2.7$) the odds for elderly NHWs.

With three exceptions—cardiovascular disease, broken hip, and cancer—health-related conditions tend to significantly associate with depressive symptomatology among our total sample of 1152 respondents. It should also be noted that the four nonspecific health-related conditions (the necessity of cutting back on activities, staying in bed, possession of tremor/unusual movement, and shortness of breath) are by

TABLE 1: Prevalence of high depressive symptomatology^a by self-reported health-related condition for total elderly sample (N = 1152).

Condition	N	Prevalence (%)			Odds ratio	95% CI	Condition	N	Prevalence (%)			Odds ratio	95% CI
		With condition	Without condition	High depressive symptoms ^a					With condition	Without condition	High depressive symptoms ^a		
All CES-D respondents	1152	10.7				Ethnicity (Mexican Am)	799	13.3	5.2***	2.66	1.58	4.47	
Cutt back activities	347	22.2	5.0***	5.40	3.59	Stayed in bed	185	27.0	6.9***	5.00	3.32	7.53	
Tremor/unusual movement	228	25.2	6.7***	4.70	3.16	Shortness of breath	274	24.1	5.8***	5.19	3.49	7.73	
Cardiovascular disease	174	12.6	9.8	1.33	0.81	Hypertension	621	12.7	7.4**	1.84	1.23	2.74	
Diabetes mellitus	284	16.5	8.2***	2.22	1.49	Stroke	121	19.0	9.2***	2.31	1.40	3.81	
Broken hip	53	11.3	10.2	1.12	0.47	Cancer	173	8.1	10.6	0.74	0.41	1.33	
Arthritis	586	13.5	7.0***	2.07	1.39	Urinary incontinence	195	20.5	8.1***	2.94	1.93	4.47	
Bowel incontinence	79	20.3	9.6*	2.40	1.34								

^a Based on a total CES-D score of 16 or higher.

* $P < 0.05$; ** $P < 0.01$; *** $P < 0.001$.

TABLE 2: Prevalence of health-related conditions for elderly Mexican Americans (N = 799) and Non-Hispanic whites (N = 353) with odds ratios^a.

Condition	Prevalence of condition				Prevalence of condition			
	MA%	NHW%	Odds ratio	95% CI	MA%	NHW%	Odds ratio	95% CI
Cut back activities	33.8***	22.6	1.75	1.31 2.34	18.9***	10.0	2.10	1.42 3.11
Tremor/Unusual movement	22.4***	12.5	2.02	1.41 2.89	24.9	21.9	1.18	0.87 1.59
Cardiovascular disease	13.5*	19.4	0.64	0.46 0.90	52.9	56.3	0.88	0.68 1.13
Diabetes mellitus	30.5***	11.7	3.31	2.31 4.47	10.3	11.1	0.92	0.61 1.37
Broken hip	4.3	5.4	0.78	0.44 1.39	10.5***	25.3	0.35	0.25 0.48
Arthritis	48.5**	57.4	0.70	0.54 0.90	17.9	14.8	1.26	0.89 1.78
Bowel incontinence	8.3***	3.7	2.36	1.28 4.34				

^a Odds ratios greater than 1 signify a higher Mexican American prevalence.
 * P < 0.05; ** P < 0.01; *** P < 0.001.

TABLE 3: Logistic regression analysis predicting “high” depressive symptomatology and 13 health-related conditions by Mexican American ($N = 799$) versus non-Hispanic White ($N = 353$) ethnicity, adjusting for educational attainment^a.

	B MA versus NHW	B adjusting for educational attainment		B MA versus NHW	B adjusting for educational attainment
Depression (“high”)	0.98***	0.43	Stayed in bed	0.74***	0.13
Cut back activities	0.56***	0.12	Shortness of breath	0.17	-0.13
Tremor/unusual movement	0.70***	0.27	Hypertension	-0.13	-0.33*
Cardiovascular disease	-0.44*	-0.54*	Stroke	-0.09	-0.42
Diabetes mellitus	1.20***	0.94***	Cancer	-1.06***	-0.72***
Broken hip	-0.25	-0.36	Urinary incontinence	0.23	0.04
Arthritis	-0.36**	-0.46**	Bowel incontinence	0.86**	1.22***

^aEducational attainment (after adjusting for MA versus NHW ethnicity) significantly and positively associated with “high” depressive symptomatology ($P < 0.001$), cutting back on activities ($P < 0.000$), tremor/unusual movement ($P < 0.001$), diabetes mellitus ($P < 0.05$), being bedridden ($P < 0.001$), shortness of breath ($P < 0.01$), hypertension ($P < 0.05$), stroke ($P < 0.05$), cancer ($P < 0.05$), and bowel incontinence ($P < 0.05$). Education did not significantly associate with cardiovascular disease, broken hip, arthritis, or urinary incontinence (after adjusting for effects of MA versus NHW ethnicity).

* $P < 0.05$; ** $P < 0.01$; *** $P < 0.001$.

far the most strongly associated with depressive symptomatology in this sample. The odds for “high” symptomatology among respondents who have stayed in bed all/most of the day (OR = 5.0), cut back on normal activities (OR = 5.4), experienced shortness of breath during normal walking (OR = 5.2), or have tremor/unusual movement (OR = 4.7) are profoundly higher than odds for respondents who do not suffer from these conditions.

Several specific diseases also meaningfully were associated with “high” levels of depressive symptoms; the odds for “high” depressive symptoms among those who suffer from hypertension (OR = 1.8), diabetes (OR = 2.2), stroke (OR = 2.3), arthritis (OR = 2.1), urinary incontinence (OR = 2.9), and bowel incontinence (OR = 2.4) were two or more times the odds for those who did not have these conditions. Three other specific illnesses—cardiovascular disease, broken hip, and cancer—did not significantly associate with depressive symptomatology in our sample.

3.2. Prevalence Findings: MAs. Prevalence rates for these 13 health-related conditions are presented for the elderly MA and NHW samples in Table 2. Also included are significance test results and odds ratios comparing MA prevalence rates with those of NHWs. Regarding the four nonspecific health-related conditions, 34% of El Paso’s elderly MAs have had to cut back on activities, 25% were experiencing shortness of breath, 22% possessed tremor/unusual movement, and 19% had to stay in bed most or all of the day during the three-month period prior to interview. Additionally, 49% had been diagnosed with diabetes, 53% had hypertension, and 49% had arthritis. Finally, in descending order, Mexican American prevalence rates for urinary incontinence, cardiovascular disease, cancer, stroke, bowel incontinence, and broken hip were 18%, 14%, 10%, 10%, 8%, and 4%.

3.3. Odds Ratios Comparing Prevalence Rates for MAs and NHWs. Elderly Mexican Americans in El Paso were significantly more likely than their NHW counterparts to possess

five of the thirteen conditions. Specifically, MA odds ratios were significantly higher for cutting back on activities (OR = 1.8), being bedridden (OR = 2.1), possessing tremor/unusual movement (OR = 2.0), diabetes (OR = 3.3), and bowel incontinence (OR = 2.4). On the other hand (and in line with other research findings) [24] elderly MAs appeared to be relatively healthier than their NHW counterparts with respect to cardiovascular disease (OR = 0.64), cancer (OR = 0.35), and arthritis (OR = 0.70). Thus the odds for cardiovascular disease among El Paso’s elderly MAs were 1.6 times ($1 \div 0.64$) lower than those for NHWs. Lower odds among MAs for arthritis and cancer were (1.4 and 2.9, resp.).

3.4. Logistic Regression Analysis: The Moderating Effects of Educational Attainment. A logistic regression analysis was performed in order to ascertain whether an important SES variable (educational attainment) could account for some of the differences between prevalence rates of conditions between the ethnic groups summarized in Table 2. Relative effects of MA-NHW ethnicity versus educational attainment on possession of “high” depressive symptomatology and the 13 health-related conditions are summarized in Table 3. When considered alone ethnicity results mirror those portrayed in Table 2. Elderly MAs are significantly more likely than NHWs to possess high depressive symptomatology, necessarily cut back on activities, experience tremor/unusual movement, suffer from diabetes mellitus, be bedridden, and experience bowel incontinence. On the other hand, elderly MAs were significantly less likely than NHWs to suffer from cardiovascular disease, arthritis, and cancer.

In the current study, “high” depressive symptomatology rates were not higher in the MA sample, after adjusting for a key socioeconomic variable (educational attainment). After including educational attainment in the equations, only diabetes and bowel incontinence were significantly more likely to occur in the MA than NHW grouping. Cardiovascular disease, arthritis, cancer, and hypertension were significantly

less likely to occur among elderly MAs after adjusting for educational attainment.

4. Discussion

4.1. Importance of Direct Biethnic Comparisons in a US-Mexico Border Environment. Studies that focus exclusively on MA populations typically draw ethnicity-based conclusions either by looking at various degrees of within-group acculturation or by comparing their research findings with those collected from NHW samples living elsewhere in the United States. By focusing on this highly-populated border county (est. 2009 population of 751,296) [40] we were able to simultaneously assess ethnic and educational effects on possession of depressive symptoms and 13 health-related conditions and to include the comparison of MA and NHW samples in the same study. The fact that El Paso County is 81.8% MA [40] means that, although relatively poor—25.2% of El Paso County's 2009 population live below the poverty line—[40] our sampling strategy permitted us to include a broader SES spectrum among our MA household sample than is typically found in other published research.

4.2. Depressive Symptoms in Elderly Mexican Americans in the Current Study. The current study found that 13.3% of the elderly MA sample endorsed high levels of depressive symptoms (CES-D rating of 16 or higher), which is lower than the 25.6% of elderly Hispanics who reported high rates of depressive symptoms in the 5-state H-EPESE sample [17]. However, the 13.3% rate of MAs endorsing high levels of depressive symptoms in the current study is similar to the rate previously reported in a study from New Mexico (9.5% of males and 19.2% of females reported high levels of depressive symptoms in that study) [10]. This may reflect the fact that the current study (El Paso County) and the study conducted in New Mexico (Bernalillo County) were done in populations where Hispanic population constituted a large proportion of the county. In demographic situations such as these, a sizable array of social resources may be available to MAs. Indirect evidence for this suggestion is provided by Ostir et al. in their analysis of 1993-1994 five-state H-EPESE data [41]. These authors found a -0.548 unit decrease in CES-D score for each 10% increase in Mexican American neighborhood population, a finding that may be linked to the availability of familial, friendship, and socioeconomic resources. The accessibility of such resources may tend to insulate elderly MAs from life conditions associated with minority status. This phenomenon may be especially salient in El Paso County where the MA population comprises 81.8% of the total [30]. A previous community survey of El Paso County adult residents found that MAs were significantly more familistic than their NHW counterparts [39]. Findings from that study, however, brought into question whether or not familism, as opposed to what the authors refer to as “resource-in-place” support, is a positive contributor to mental well-being.

4.3. Effects of SES on Depression and Health-Related Conditions that May Directly Affect Quality of Daily Life Across Ethnic Groupings. In concert with previous research findings (including above-cited sources) we found that the rate of “high” depressive symptomatology for El Paso's elderly MAs (13.3%) was significantly higher than that for their NHW counterparts (5.2%); however, when adjusting for effects of educational attainment (Table 3), no significant ethnic differences in symptomatology were found. This is consistent with the analyses of Romero and her colleagues [10] recently conducted in a community sample from New Mexico.

The current study found a number of nonspecific and specific health-related conditions to be more typical of the MA sample, but, as with depressive symptomatology, many of these differences became nonsignificant after adjusting for educational attainment.

In the sample as a whole—all subjects regardless of ethnicity—several medical conditions (diabetes, arthritis, hypertension, and stroke) were significantly associated with higher depressive symptomatology in bivariate analyses (Table 1). Subjects who reported tremors/unusual movements and/or shortness of breath also showed significant proneness towards high levels of depressive symptoms. These illnesses or medical symptoms thus reflect risk factors for higher depressive symptomatology among El Paso County's elderly population. The mechanisms of this association may reflect as yet undetermined causal patterns or a common biological pathogenesis of depression and some of these disorders.

Respondents who had had to cut back on activities and/or spent much of the day in bed possessed odds for high levels of depressive symptoms at least five times the odds for those who did not so endorse these items (Table 1). This association may be due to the direct effects of depression, however, on phenomena such as anhedonia and fatigue.

Our findings with regard to differences between MA and NHWs are especially instructive, as they demonstrate that many differences in rates of illness between these groups may actually be an artifact of differential SES of the two ethnic groups. Despite our rigorous attempts to stratify our sampling procedures in order to include a greater number of upper-middle-class MAs, the characteristics of our MA sample speak for themselves. The MA versus NHW disparity in percentages of high school graduates in our sample was 35% to 86.9%. Only 23.9% of MAs in our sample possessed incomes above the El Paso median; 38.4% of these elderly MAs were without health insurance, including MEDICARE. This set of predicaments associated with lower class status may well lead to “high” depression regardless of ethnic identification. It should also be noted that hard physical labor associated with many working-class jobs makes physical injury highly probable and brings workers in close proximity to potentially toxic chemicals. Such conditions may in themselves constitute risk factors for mental health, various diseases, and other health-related conditions.

4.4. MA Ethnicity and Rates of Medical Illnesses. After controlling for socioeconomic factors, the current study did find

several significant differences in the “prevalence” of medical diseases between elderly MAs and NHWs. Mexican American elderly were *more prone* to report having diabetes and bowel incontinence compared to NHW subjects (adjusting for educational attainment), while cardiovascular disease, arthritis, hypertension, and cancer were *less likely* to be reported in the MA grouping. The specific reasons for these differences in self-reported disease/health condition rates in our sample could be due to a number of factors. For instance, knowledge of some diagnoses (cardiovascular disease, hypertension, cancer) requires specific diagnostic procedures or may be caught in regular checkups, and there may be ethnic or cultural differences in how often persons see doctors or participate in health screenings. There may also be specific genetic factors, diet/nutritional factors, environmental factors, cultural, and psychological factors which contribute to increased risk or protection from particular diseases [42–44].

4.5. Limitation. Our study is focused on a single geographic region and county in which specific factors may decrease applicability to MAs in other regions and to other Hispanic populations. The current study also focused on depressive symptoms as measured by the CES-D and did not include formal diagnoses of depression and other mental disorders. A final limitation is that rates of medical illnesses were based on self-report and not actual diagnostic tests. Nevertheless, we believe that these results provide an important insight into the mechanisms of chronic disease/other health-related conditions and depression in a large sample of MAs and offer an important new data set not contained in previous studies of the MA elderly. Furthermore, this study gives a unique insight into how these illnesses present in a major United States metropolitan area in which MAs are the cultural majority.

4.6. The Need for Additional Research. This cross-sectional study has revealed a number of findings that both corroborate and augment those previously reported in the MA elderly mental health literature. Nevertheless, a number of questions remain unanswered that could be better addressed through longitudinal research. *The first question* deals with the disparity of reported prevalence rates for depression that exists between elderly MA and NHW populations. Specifically what types of social and community resources are the most salient contributors to mental well-being? To what extent is mental well-being related to the differential availability and accessibility of such resources? To what extent does the proportion of MAs in a community/metropolitan area affect the availability of these resources? *The second question* involves the temporal sequence that occurs between depression, the onset of specific medical illnesses, and how particular depressive or medical symptoms affect the quality of life of the person. *Thirdly*, we suggest that future research address (1) the extent to which multiethnic disease/health-related condition profiles exist within societal populations, (2) the extent to which such profiles associate with differential rates of depression, and (3) the extent to which

these profiles and “high” depression rates are moderated by effects of SES. Carefully designed studies will be needed in order to determine whether particular ethnic and cultural groupings do indeed have specific risk or protective factors for psychiatric and medical diseases and, if these factors exist, to identify them.

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Research Article

More Similar than Different? Exploring Cultural Models of Depression among Latino Immigrants in Florida

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The Surgeon General's report, "Culture, Race, and Ethnicity: A Supplement to Mental Health," points to the need for subgroup specific mental health research that explores the cultural variation and heterogeneity of the Latino population. Guided by cognitive anthropological theories of culture, we utilized ethnographic interviewing techniques to explore cultural models of depression among foreign-born Mexican ($n = 30$), Cuban ($n = 30$), Columbian ($n = 30$), and island-born Puerto Ricans ($n = 30$), who represent the largest Latino groups in Florida. Results indicate that Colombian, Cuban, Mexican, and Puerto Rican immigrants showed strong intragroup consensus in their models of depression causality, symptoms, and treatment. We found more agreement than disagreement among all four groups regarding core descriptions of depression, which was largely unexpected but can potentially be explained by their common immigrant experiences. Findings expand our understanding about Latino subgroup similarities and differences in their conceptualization of depression and can be used to inform the adaptation of culturally relevant interventions in order to better serve Latino immigrant communities.

1. Introduction

In order to develop an evidence base for mental health care for minority populations, specific ethnic and cultural issues must be taken into account [1–4]. The US Surgeon General's report, "Culture, Race, and Ethnicity: A Supplement to Mental Health" and a recent white paper from the National Council of La Raza entitled "Critical Disparities in Latino Mental Health: Transforming Research into Action" [5, 6], points to the need for sub-group specific mental health research that explores the cultural variation and heterogeneity of the Latino population. Prior studies point to differences in depression and other psychiatric disorders

among Latino ethnic subgroups [7–10]. In one of the largest epidemiological studies on Latino mental health, Alegria et al. report differences in the rates of disorders based on ethnic subgroup, age at immigration, and language proficiency [8]. The lifetime prevalence rate for major depression was reported to be 20.1% for Puerto Ricans, 18.6% for Cubans, 14.7% for Mexicans, and 13.9% for other Latinos. Not only are language issues recognized as a barrier to treatment, but cultural beliefs and practices influence the experience of depression (e.g., help-seeking behavior, symptoms, and ideas about etiology) and thus can moderate the effectiveness of prevention and treatment interventions [11]. One reason appears to be the conceptualization of depressive symptoms

as social problems or emotional reactions to certain conditions, contrasted with the dominant perception of depression as a medical problem requiring medical treatment [9, 12, 13].

Overall, little is understood about the mental health experiences of Latino immigrants [14, 15]. Given the large number of Latino immigrants and the relevance of immigration status to service provision and to understanding the etiology of mental disorders, a focus on Latino immigrants is both timely and important [8, 16, 17]. Because of the heterogeneity of the Latino population, as the aforementioned reports suggest, there is a need for further research that disaggregates Latino immigrants to explore the nuances of differences in perceptions of depression and mental health services [11, 17, 18]. While there is a growing body of literature on Latino's perception of mental health [19–22], few studies have compared views of depression among the various ethnic groups that fall under the Hispanic umbrella, and even fewer have examined the role of immigration. While Latino immigrants appear to experience lower rates of depression than their U. S.-born compatriots and White Americans, they are also less likely to seek mental health services when they are depressed [6, 9, 20, 23–25]. Lackey (2008) suggests that if models used by immigrants to self-assess their mental health are different from the models used by clinicians, there will be a greater disparity between those who might need mental health care and those who are perceived to need it. Furthermore, treatment might be rejected if the treatment immigrants expect broadly differs from the treatment provided by clinicians [26]. A more nuanced understanding about the cultural construction of depression is needed to better serve Latino immigrant communities [20, 22].

This paper explores intracultural variations in descriptions of depression among Latino immigrants residing in West Central Florida. The first aim was to compare and contrast explanatory models of the causes, symptoms, and treatments for depression among four Latino immigrant subgroups. The second aim was to assess the level of agreement or disagreement between the different groups using cultural consensus analysis (CCA) as a first step to determine if there are shared cultural models of depression among Latino immigrants. The cognitive theory of culture [27, 28] postulates that culture is shared among members of the same culture and that members have a similar set of guidelines or model for a given domain, for example, depression [29, 30]. Thus, cultural models are cognitive schema that represent shared understandings of illness and recovery that construct meaning, represent social reality, and direct behaviors [31]. Previous research demonstrates a link between health behaviors and cultural models [32–34].

The population of Latino immigrants residing in West Central Florida saw a 57% increase from 2000 to 2010. This is a heterogeneous group with regards to nationality, immigration experience, and socioeconomic status. The four largest subgroups in the study area of Hillsborough County are Puerto Ricans (30%), Cubans (21%), Mexicans (21%), and Colombians (5%) [35]. The largest group, Puerto Ricans, have US citizenship status, which enables them to qualify for more services and facilitates travel between the mainland

and their country of origin, allowing for the maintenance of family and social relationships. This is not the case for other groups, especially Cubans and Mexicans. While the Cuban population in this region has strong historical roots dating back to the 1900s, due to travel restrictions and the US embargo, they do not have easy access nor enduring ties to their homeland. The Mexican population is relatively younger, both in median age and in terms of historical immigration waves, and most reside in the rural parts of the county and are employed as agricultural workers. This isolation is compounded by long-term separation from family in Mexico due to increasingly strict border control and immigration regulations, and most encounter barriers to accessing services because of their immigration status. Finally, over the last decade, there has been a large influx of Colombians to the area seeking political asylum. Many are professionals with higher education although they are often relegated to work in the local service industry. Most retain strong social ties to family in Colombia and maintain frequent communication.

2. Materials and Methods

The study methodology consisted of ethnographic interviews that included the use of (1) structured (e.g., free-listed items) and (2) semistructured (e.g., open-ended items) data collection techniques [36]. The purpose of the interviews was to obtain culturally relevant descriptions of depression. The data presented in this paper reflect only information yielded during the structured (i.e., free listing portion) of the interviews. Free listing is a simple yet robust interviewing technique that is used to identify items in a cultural domain and to calculate each item's relative cultural salience (i.e., prominence, importance, familiarity, and representativeness) [36–38]. It requires three basic assumptions: items tend to be mentioned in order of familiarity, people who know more about the given domain list more than people who know less, and items most frequently listed indicate locally prominent terms [38, 39]. Thus, items listed earlier or more frequently are assumed to be more salient in a given domain [39]. Free listing is an effective method for defining the contents and boundaries of a cultural domain using the language, concepts, and categories that are meaningful to participants [37, 40].

2.1. Recruitment and Sampling Techniques. Purposive sampling techniques [36] including snowball and quota sampling were used to recruit participants. Inclusionary criteria included Latinos who (1) self-identified as foreign-born Mexican, Cuban, Columbian, or island-born Puerto Rican, (2) immigrated to the US after the age of 16, (3) were 18 years of age or older at the time of the interview, and (4) spoke Spanish. We drew our sample from established relationships with Latino community organizations. The sample size determination followed the method proposed by Weller (2007), whose algorithm suggests that without prior knowledge of the amount of agreement about a given domain (e.g., depression) among Latino subgroups,

an average level of cultural competence would require a minimum 17 participants per group [41].

2.2. Data Collection. Face-to-face interviews were conducted at the participant's home or at another place convenient to them. Institutional review board approval was obtained from the University of South Florida. All study participants were informed of the goals of the study, the voluntary nature of their participation, and that their information would be kept confidential. The interviews were digitally audio recorded with the consent of participants. Each participant was asked to verbally complete the following free-listing exercise: (1) list all the things that can cause depression, (2) list all the depression symptoms you know about, and (3) list all the ways depression can be treated. Responses were written verbatim in the order they were listed. Nonspecific prompting and a rereading of the free list to participants was used to elicit as complete of a list as possible [42].

2.3. Data Analysis. The free list data was coded and analyzed in Spanish. Some items were recoded to standardize concepts for consistency [39]. For example, the terms "cries," "cries all the time," "cries a lot," and "sobbing" were re-coded under the broad concept of "crying." For the quantitative analysis of the free-listed data, the frequency of each item and the order of occurrence were calculated using the Anthropac [43] software program. Anthropac ranked the items by the order they were listed. We used the nonparametric chi-square statistical test to assess if differences between the groups were statistically significant. For the qualitative analysis of free listed items, we identified thematic categories that emerged from the data. Native Spanish speaking members of the research team (DMT, MP, and MQ) then independently grouped the items into thematic categories based on their similarity and then met to discuss the categories and come to agreement. For example, we grouped the items "being far away from family," "migrating to another country," "not understanding the language," and "culture change" under the thematic category "immigration-related causes of depression."

Cultural consensus analysis (CCA) is a mathematical measurement model derived from the cognitive theory of culture [41, 44] that identifies the degree of shared knowledge within a group [45] or the shared agreement about a given domain across participants between and within groups [46]. CCA is suitable for analyzing within and across group similarities and differences [38, 47]. As described by Ross and Medin [19], we used CCA as a first step to explore cultural sharing regarding the causes, symptoms, and treatments for depression from the open-ended free-listed responses.

We used the free-list procedure in Anthropac [43] to generate an item-by-participant matrix [48]. For this study, agreement was assumed when two participants either free-listed the same item or when they did not mention an item [49]. Cells contained a 1 if the participant listed the item and a 0 if they did not. Including zeros in cells when participants do not mention an item potentially inflates participant-by-participant agreement patterns. However, since free listing is

not an exhaustive test but rather a sampling of salient items in response to a prompt, it is reasonable to assume that two participants who do not mention an item agree that the item is not salient at least in this context [48, 49]. In an effort to address the issue of potentially inflated participant-by-participant agreement patterns, we retained the free-listed items mentioned by at least 10% of participants in each ethnic group in the CCA. Thus, the sample size was slightly reduced for some of the ethnic groups in the CCA. For example, if a participant did not list the items mentioned by at least 10% of participants in each ethnic group for a given domain (e.g., symptoms of depression), they were excluded from the CCA analysis.

CCA creates a participant-by-participant correlation matrix (indicating agreement) among participants [50]. It is essentially a factor analysis of people, where the participants are the variables [41]. Consensus is indicated when there is a single-factor solution, which is when (1) the ratio between the first and second eigenvalues is high (usually a three to one), with a higher ratio indicating a stronger amount of agreement within the group; (2) all scores on the first factor are positive; (3) the first factor accounts for most of the variance [47]. In CCA, competence scores are also calculated for each participant in order to weight the response of each participant. Positive competency scores (between 0 and 1) are also a minimum requirement stating that there is a single factor solution, meaning a shared model [41, 46, 47, 51]. The competence score is not interpreted as the number of answers the individual knows, but rather how well the responses of the individual correspond with those of the group (e.g., ethnic group) [47].

First we ran the CCA for each ethnic group. Then, to test differences between the groups, we combined the four groups into a separate group called the "combined Latino immigrant group" and ran the CCA procedure again. Group differences can be identified in the following ways: (a) there is an overall consensus but it is greater within group than across groups and (b) not being able to achieve an overall consensus in light of the within group consensus [46, 50]. Thus, if the eigenvalues ratios were higher for the combined Latino immigrant group than for each individual Latino ethnic group, this would suggest a shared model among the Latino immigrants group in this study.

3. Results

3.1. The Sample: Participant Characteristics. Table 1 provides an overview of the 120 study participants, which consisted of 30 Colombian foreign-born, 30 Cuban foreign-born, 30 Mexican foreign-born, and 30 Puerto Rican island-born individuals. Women comprised the majority of the sample (66%). English proficiency varied, especially between Puerto Ricans and the other groups. A larger percentage of Puerto Ricans (60%) and Cubans (51%) had at least some college education. The majority of participants were married (53–70%). Colombians, Cubans, and Puerto Ricans had similar median ages (54, 57, and 52 years, resp.), while Mexicans had a much lower median age of 36. With regard to length

TABLE 1: Sample demographics: Latino immigrants.

	Colombian (N=30)%	Cuban (N=30)%	Puerto Rican (N=30)%	Mexican (N=30)%
English proficiency				
Very good	3.0	10.0	60.0	3.0
More or less	73.0	53.0	30.0	47.0
Not at all	24.0	37.0	10.0	50.0
Gender				
Women	67	67	67	67
Men	30	30	30	30
Level of education				
Elementary or less	7.0	13.0	10.0	30.0
Some high school	17.0	3.0	7.0	30.0
High school	13.0	33.0	23.0	37.0
Some college + plus	63.0	47.0	60.0	3.0
Vocational/technical	0.0	4.0	0.0	0.0
Marital status				
Single	30.0	3.0	20.0	13.0
Married	57.0	54.0	53.0	70.0
Divorced	13.0	30.0	23.0	17.0
Widow	0.0	13.0	4.0	0.0
Age				
Median age	54	57	52	36
Range	(24–77)	(23–86)	(26–77)	(18–62)
Length of time in us				
1 year or less	7.0	13.0	17.0	0.0
2–5 years	4.0	13.0	3.0	23.0
6–10 years	43.0	33.0	10.0	20.0
11 + years	46.0	41.0	70.0	57.0
Health insurance				
Yes	23.0	57.0	73.0	10.0
Ever been diagnosed with depression				
Yes	13.0	30.0	33.0	10.0

of time in the USA, 59% of Cubans, 54% of Colombians, 43% of Mexicans, and 30% of Puerto Ricans had been in the USA ten years or less. A much higher proportion of Puerto Ricans (73%) had health insurance compared to the other groups. Experience with depression varied across groups, with 33% of Puerto Ricans, 30% of Cubans, 13% of Colombians, and 10% of Mexicans reporting that they had ever been diagnosed with depression.

3.2. Aim 1: Comparing and Contrasting Models of Depression Causality, Symptoms, and Treatments. Participants were asked to list the causes, symptoms, and treatments for depression. Below, the results of the most frequently listed items are first presented, including the thematic analysis of the free-listed data by domain. Figures 1–3 illustrate the most frequently listed items mentioned by at least 10% of

participants in each ethnic group. Following this section, we present the agreement results from the CCA.

3.3. Causality. Figure 1 details the most frequently listed causal factors for depression grouped into the following overarching themes: (1) economic strain and work-related problems, (2) interpersonal problems related to family and or relationship issues, (3) physical illness/disease related, (4) psychosocial and emotional problems, (5) bereavement, (6) immigration related, and (7) substance abuse/violence.

Work-related problems and economic strain that negatively affected the family such as financial insecurity, debt, unemployment, and lack of money were mentioned across the four ethnic groups. In fact, they were the most frequently listed causal factor for depression, with 67% of Colombians, 44% of Mexicans, 43% of Cubans, and 43% of Puerto

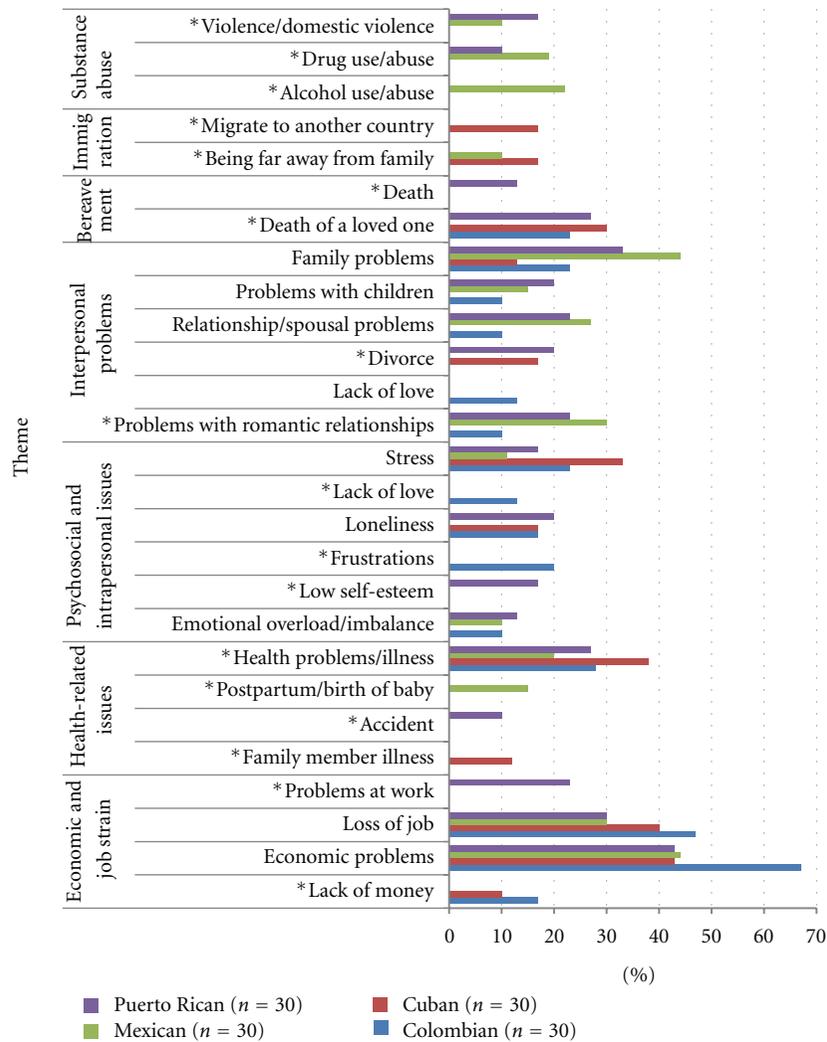


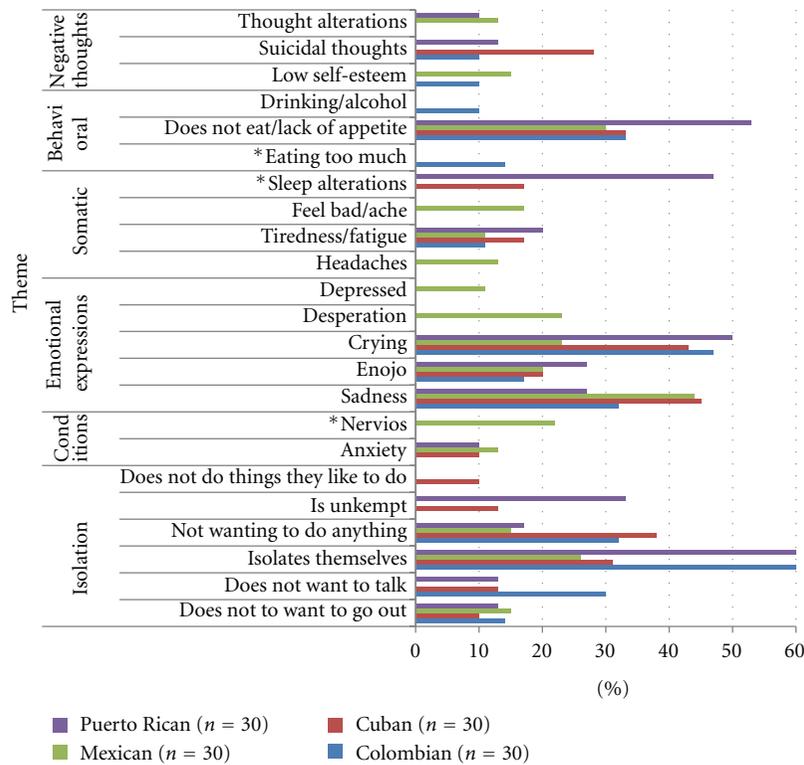
FIGURE 1: Most frequently listed causes of depression.

Ricans mentioning this factor. For example, one Mexican participant said, “One falls in to depression in a situation like the one we are in today, because we don’t have money to pay the bills.” Job loss or not finding employment was mentioned by all four groups. Health problems related to physical illness and disease were also mentioned as a possible cause of depression. Cuban (38%), Colombian (28%), Puerto Rican (27%), and Mexican (20%) participants listed the diagnosis of a terminal illness or living with a chronic disease as a cause of depression. Another health-related issue mentioned by 10% of Mexican participants was the birth of a new baby and associated postpartum isolation of the mother.

Psychosocial and intrapersonal issues were also mentioned as causal factors, with “stress” perceived as a cause of depression by 11–33% of participants. For example, a Colombian participant stated that it was “*la presión* (external stress or pressure) of life in the United States with the many obligations that one has, having to get to a certain place at this time, and so many responsibilities. Then, little by little, you start running out of time to do the things and then you

get stressed and then you get depressed.” *La soledad* (to be alone) was also seen as a cause of depression rather than the other way around (i.e., depression causing loneliness or isolation), as illustrated by the following quote from a Cuban participant: “No one visits me, they don’t call me, no one comes ... and then I start to think about that and I start to cry and think bad things.” Another attributing factor listed was an emotional overload or imbalance as a result of “*un golpe fuerte emocional*” (a strong emotional blow/hurt or a situation that is too overwhelming).

Interpersonal problems that negatively affected the integrity of family, such as conflict within the family, arguments, and discord, were mentioned by all four groups. This is illustrated by a quote from a Mexican participant: “... family problems can cause depression because they bring sadness ... and then not getting along with the family.” Seeing their children in trouble or struggling was also mentioned. Many participants specifically mentioned problems with children who were “*descarrilados*” (“off track”), involved with drugs, disobedient, and/or unappreciative of the sacrifices that their



* Indicates differences are statistically significant $P < 0.05$

FIGURE 2: Most frequently listed symptoms of depression.

parents had made for them. A Puerto Rican participant stated that depression can affect “persons that are confronting problems with their children ... you know, the youth here get out of line and parents feel helpless to see their child, whom they love so much, doing drugs, lost, [and] that parent can get depression because of it.” Also mentioned were failed romantic relationships, divorce, and spousal problems such infidelity and unrequited love.

Thoughts of death and the loss of a loved one were mentioned as causal factors for depression by Cubans, Colombians, and Puerto Ricans. Immigration-related issues, such as being far away from family and difficulties adjusting to life in the United States, were mentioned by 17% of Cuban and 10% of Mexican participants. A Cuban participant noted “I am not with my family a whole lot, I miss my mom very much, my sisters, and even though I am here with my son and my wife, I am sad because I am not with them. When my father died I was very sad because I could not be there.” Also mentioned were the sudden changes that immigrants face adjusting to the culture and life in the United States.

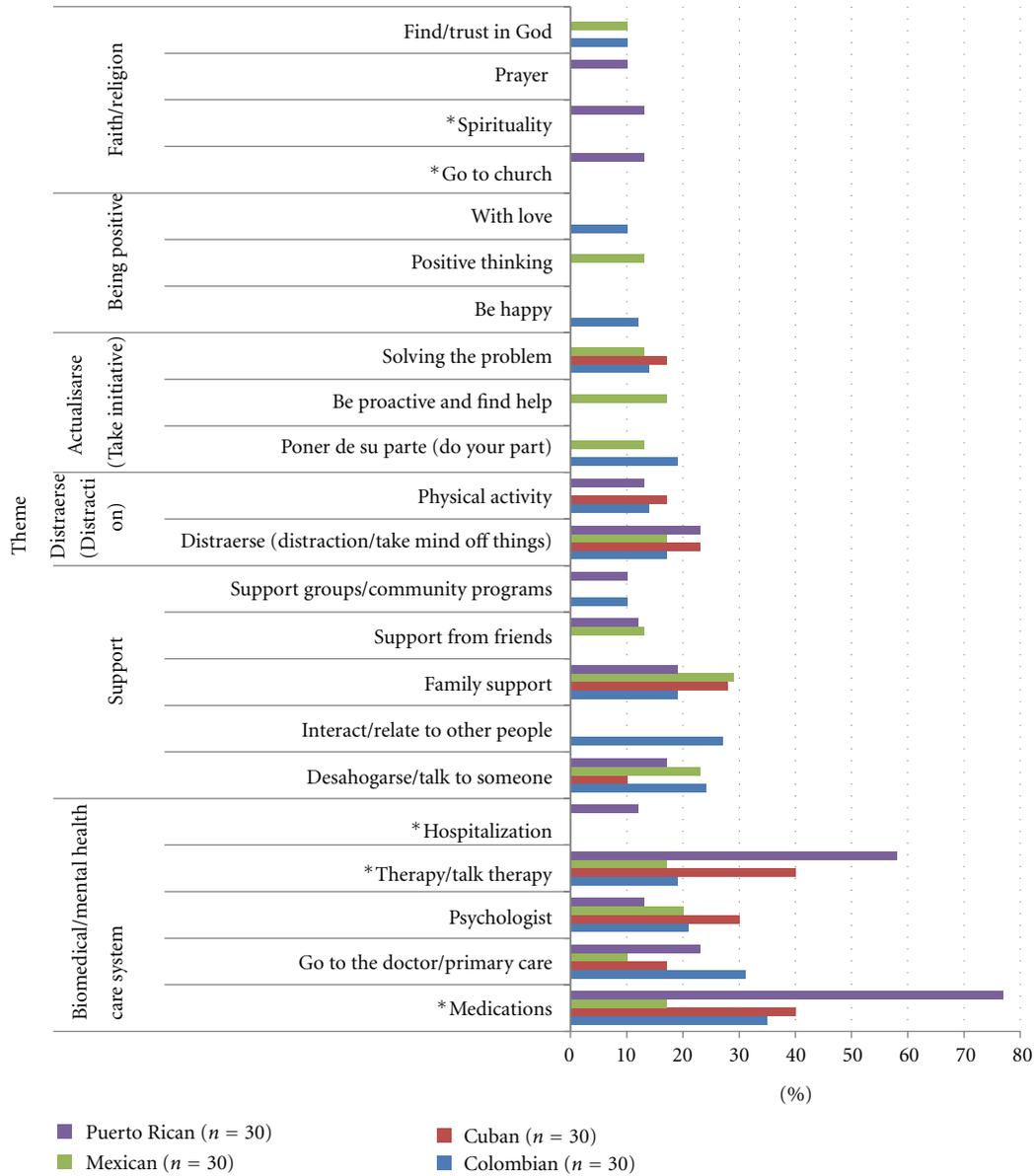
Finally, depression was also attributed to substance use and domestic abuse. Twenty-two percent of Mexican participants specifically mentioned alcohol use. Trauma or violence due to physical or verbal abuse was also listed by Puerto Rican (17%) and Mexican participants (10%).

3.4. Symptoms. Figure 2 details the most frequently listed symptoms of depression grouped into the following thematic categories: (1) lack of interest and or anhedonia,

(2) other conditions or mental illnesses, (3) emotional expressions, (4) somatic expressions, (5) behavioral, and (6) cognitive/thought-related symptoms.

Symptoms related to lack of interest and anhedonia were mentioned by participants in the four groups. Becoming isolated was the most frequently listed symptom of depression among Colombians (60%) and Puerto Ricans (60%), while sadness was the most frequently listed symptom by Mexicans (44%) and Cubans (45%). As delineated in the following statement regarding symptoms of depression, one participant stated it was noticeable, “when a person becomes a hermit, they close themselves off, they don’t want help, they cry a lot and nothing matters.” Also mentioned was not wanting to talk, go out, or not having “*ganas*” (desire) to do anything. *Enojo* (anger or rage) was also listed as a symptom of depression by participants in all four groups.

Anxiety was identified as a symptom of depression by Mexicans (13%), Cubans (10%), and Puerto Ricans (10%). Interestingly, Mexican participants (22%) were the only ones to list *nervios*, a culturally significant and discrete syndrome or folk illness [30, 52], as a symptom of depression. Somatic symptoms of depression were also listed by participants across all four ethnic groups. However, there was variation in the specific symptoms reported. Tiredness and fatigue were mentioned by 11–20% of participants. Headaches and physical aches were only mentioned by Mexicans (13% and 17%, resp.). Sleep alterations such as sleeping too much and insomnia were also mentioned by 47% of Puerto Ricans and 17% of Cubans.



*Indicates differences are statistically significant $P < 0.05$

FIGURE 3: Most frequently listed treatments for depression.

Behavioral symptoms related to loss of appetite were listed by 30–53% of participants. However, excessive eating was only listed by Colombians. Drinking alcohol as a symptom of depression was also only mentioned by 10% of Colombians.

Negative thoughts such as suicidal ideation and feeling worthless were listed as symptoms of depression. Suicidal thoughts were mentioned by 28% of Cubans, 13% of Puerto Ricans, and 10% of Colombians but were not listed by Mexican participants as a symptom of depression. Thought alterations such as thinking too much, being too pensive and not being able to concentrate were also listed as symptoms of depression by Mexican (13%) and Puerto Rican (10%) participants.

3.5. *Treatment.* The treatment items listed can be grouped into the following thematic categories: (1) biomedical and

or mental health care system, (2) support, (3) *distractirse* (distraction/doing things to take your mind off things), (4) *actualizarse* (take personal initiative), (5) being positive, and (6) faith/religion.

Participants in the four ethnic groups listed medications, going to the doctor (i.e., primary care physician), therapy, and going to a psychologist. Interestingly, a much higher percentage of Puerto Ricans listed medication as a form of treatment (77%) compared to the Mexican participants (17%).

Participants in all four ethnic groups listed support from family (19–29%) and being able to *desahogarse* (experience relief by talking to someone) (10–24%). *Distractirse* (distraction or activities to take one’s mind off things) was listed by participants in the four ethnic groups (17–23%). One Puerto

Rican participant said she, “thought it was important to find an activity, something the person likes to do, like gardening, walking.” Physical activity or staying active was mentioned by 17% of Cubans, 14% of Colombians, and 13% of Puerto Ricans but was not mentioned by the Mexican participants.

Actualisarse (taking personal initiative) and solving the root problem was listed by Cuban (17%), Colombian (14%) and Mexican (13%) participants. The following quote from a Cuban participant illustrates this point: “Resolving the problems that are at the source and finding solutions for them is the first place to start.”

Ten percent of Mexicans listed positive thinking. Being positive (10%) and happy (12%) was mentioned by Colombians. For example, a Colombian participant exuberantly said, “Ohhh, I think that it is all in your mind, if the person focuses on the positive side of things and they go through a bad experience, and they focus on the good things that they can gain from that experience then they won’t go into depression, that is what I think.”

Items related to finding something spiritual, going to church, and prayer were mostly listed by Puerto Rican participants (10–13%). To “trust and look/find God” was listed by Colombians and Mexicans (10%). Cubans did not list faith and, or religion-related items as a treatment for depression.

3.6. Aim 2: Exploring Levels of Agreement/Cultural Sharing among the Four Latino Groups. Despite the range of responses and different amounts of items listed by each group, as described above, we also explored the levels of cultural model agreement within and between all four groups. In the following section, we explore the amount of agreement between Colombian, Cuban, Mexican, and Puerto Rican participants regarding the causes, symptoms, and treatments for depression.

3.7. Agreement on Causes of Depression. The eigenvalue ratios for causality were above the 3:1 ratio, suggesting agreement within each ethnic individual group. For Colombians, the eigenvalue ratio was 3.5 with an average competence of .60 (s.d. = .16), for Cubans (3.7 ratio) average competence of .62 (s.d. = .18), Mexicans (3.4 ratio) average competence .60 (s.d. = .17), and Puerto Ricans (3.6 ratio) average competence .58 (s.d. = .18).

However, when the four Latino immigrant groups were combined, the eigenvalue ratio was considerably higher at 16.13 with an average competence of .81 (s.d. = .08), suggesting that there might be a shared model of depression causality. As a result, one preliminary conclusion based on this sample is that Colombians, Cubans, Mexicans and Puerto Ricans immigrants show strong intragroup consensus in their model of depression causality.

3.8. Agreement on Symptoms of Depression. The eigenvalue ratios for symptoms of depression were all above the 3:1 ratio. When the four Latino immigrant groups were combined, the eigenvalue was 8.3, or higher than the eigenvalue for each of the individual subgroups (5.1 with an

average competence .72 (s.d. = .16) for Mexicans, 5.1 with an average competence of .71 (s.d. = .15) for Puerto Ricans, 3.6 with an average competence of .63 (s.d. = .24) for Cubans, and 6.4 with an average competence of .74 (s.d. = .15) for Colombians).

3.9. Agreement on Treatment of Depression. The eigenvalue ratio again was above the 3:1 ratio across all four Latino subgroups; for Colombians, it was 5.0 with an average competence of .71 (s.d. = .13), for Cubans 3.8 with an average competence of .70 (s.d. = .16), for Mexicans 5.6 with an average competence of .70 (s.d. = .16), and for Puerto Ricans 7.9 with an average competence of .76 (s.d. = .16). When all four groups were combined, the eigenvalue ratio was 11.5 with an average competence of .83 (s.d. = .07).

4. Discussion and Conclusion

This anthropologically informed study presents an innovative methodological approach to understanding depression by focusing on intracultural variations in perceptions of depression causality, symptoms, and treatments among Latinos immigrants. Despite a clear need to disaggregate ethnic subgroups rather than lumping all Latinos into one homogeneous group without respect for historical, socioeconomic, and cultural differences, data from this study suggest a mostly shared model of depression among Latino immigrants in this region of Florida. Our results indicate more similarities than differences in how participants viewed the causes, symptoms, and potential treatments for depression. The high level of agreement across the three domains of depression causality, symptoms, and treatment with eigenvalue ratios of 3.0 or higher, and the lack of negative competence scores indicates a good fit to the consensus model. When comparing the subgroup eigenvalues to the eigenvalue of the combined Latino immigrant group across all three domains, the eigenvalue was considerably higher in the combined group. This suggests that there might be a shared understanding of depression among the Latino immigrant groups studied and is similar to other studies that have found a shared causal model of disease (e.g., breast cancer and *empacho*, a common folk illness) among Latino immigrants, regardless of country of origin [45, 53].

However, context and intergroup variation must still be taken into account, as there were significant differences in the items that participants from different countries of origin listed as important. For example, more than 40% of Colombians reported concerns relating to stress and job loss, which may be related to their immigration status and unique history in Florida, as noted at the start of this article. Economic problems and postpartum issues were reported as causes of depression for Mexicans, who are also the youngest group in the sample and most likely to be of childbearing age. Further, 90% of this group did not have health insurance, and the birth of a child directly impacts the family’s overall income. Among Cubans, physical illness, economic problems, and loss of job were identified as primary causes of depression; these three factors are interrelated for this

population, who are the oldest in the sample and of whom 43% did not have health insurance. Among Puerto Ricans, family and economic problems were identified as the most common causes of depression. Thus, the saliency of stress and loneliness varied among participants and was in part influenced by legal status and immigration-related factors, especially in the case of Cubans and Mexicans.

The majority of Latino immigrants across the four groups recognized depression in terms that would be utilized by mental health practitioners. This is similar to the findings from Martinez Pincay and Guarnaccia (2007), in which participants listed emotional and somatic symptoms of depression comparable to those in the DSM-IV diagnostic manual [21]. Consistent with the literature, we found that Latino immigrants' views of depression causality were primarily informed by social and interpersonal factors that attributed depression to life circumstances or interpersonal and economic problems, rather than to biochemical or biological factors [14, 19, 22, 26, 34, 54]. This appears to fit well with the "situational" model of depression, which underscores the relevance of contextual factors such as social problems, economic strain, and interpersonal conflicts [14, 19, 55–59]. In this approach, depression is not seen so much as an illness but rather a result of the hardships experienced and challenges faced living in the United States [21]. The prominence of interpersonal problems, family conflict, and economic problems highlights the importance Latino immigrants place on family unity and cohesion [19].

By identifying patients' cultural models of depression, clinicians and practitioners may be able to address the underlying sociocultural factors that impact diagnostic and treatment accuracy [33]. Our findings may have implications for the appeal of certain treatment approaches. For example, the salience of pharmaceutical treatments varied by group, with medications emphasized by participants in the Puerto Rican but not listed as an option for the Mexican group. However, this should not necessarily be viewed solely as a matter of cultural preference, but rather related to access. In our sample, Puerto Ricans had the highest rates of health insurance and thus more access to medications, and Mexicans the lowest; in each case, access can be explained by the groups' unique immigration trajectory and related policies.

On the other hand, *desahogarse* (gaining relief by talking to someone) and family support ranked highly for all groups, and these could represent important starting points for designing interventions. The saliency of interpersonal sources of support and the emphasis on problem solving might suggest that programs or interventions that build on social relationships and teach problem-solving and self-management skills to cope with situational problems might be well received by Latino immigrants, regardless of country of origin. Understanding that perceptions of depression are also informed by the immigration experience and adaptation to life in the United States can help practitioners assess, better engage, and treat patients from Latino immigrant communities. It may not be necessary to create programs for a specific Latino ethnic group (e.g., Cubans), but it is vital to create psychotherapeutic interventions and depression

prevention programs that resonate with the saliency of social stressors and interpersonal relationships.

This study has several limitations. First, we used a non-random purposive sample which limits the generalizability of results to Latino immigrants outside of West Central Florida or to US-born Latinos. The second limitation of this study is that it does not account for other social and demographic factors such as gender, education, income, and length of time in the US that may affect perceptions of depression causality, symptoms, and treatment. These will be addressed in a future study. Third, the use of the CCA technique with free-listed data is exploratory, with the verification of the sharing and distribution of cultural models requiring additional data [60] using a fixed-format questionnaire. Further studies are needed to confirm if there is indeed a shared model of depression among Latino immigrants and to compare the findings to non-Latino groups and clinicians' views of depression.

Findings from this study contribute to our understanding about Latino immigrants' views about depression and its treatment by examining subgroup similarities and differences. Our preliminary results can inform additional studies on this topic and ultimately may aid in the adaptation of culturally relevant interventions to better serve Latino immigrant communities, regardless of country of origin.

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Research Article

Factors Influencing Depression and Anxiety among Black Sexual Minority Men

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The primary aim of this study was to examine the relationships between depression and anxiety, and ethnic and sexual identity development, and discrimination and harassment (DH) among Black sexual minority men. Additional aims were to determine whether an interaction effect existed between ethnic and sexual identity and whether coping skills level moderated these relationships. Using an observational cross-sectional design, 54 participants recruited through snowball sampling completed self-administered online surveys. Stepwise multiple regression analysis was used. Sixty-four percent of the variance in depression scores and 53% of the variance in anxiety scores were explained by DH and internalized homonegativity together. Thirty percent of the sample had scale scores indicating likelihood of depression and anxiety. Experience of DH and internalized homonegativity explained a large portion of the variability in depression and anxiety among Black sexual minority men. The study showed high prevalence of mental distress among this sample.

1. Introduction

Research and theoretical suppositions suggest that Black sexual minority men (BSMM) may experience more depressive symptoms and anxiety than their male heterosexual and Black female counterparts and at minimum parallel those of their white sexual minority counterparts. Little is known about factors that influence the psychosocial health of BSMM. The limited research conducted with BSMM, predominantly White samples of sexual minority men, and Black men with unspecified sexuality, however, indicates that unique concerns related to identity and exposure to violence and discrimination may play important roles. Also critical may be individual's internal and external resources that can serve as coping tools. The primary aim of this study was to examine the relationships between depression and anxiety, and ethnic and sexual identity development (operationalized as Black identity achievement and internalized

homonegativity), discrimination and harassment (DH), and coping skills among BSMM.

Mental health disorders affect a considerable proportion of the general population in the United States [1] with roughly 21% and 29% of adults meeting Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition criteria for a mood or anxiety disorder, respectively, over their lifetime [2]. General population investigations using random sampling have shown that homo-/bisexual men are more likely than heterosexual men to have mood and anxiety disorders [3–7]. In a meta-analysis, Meyer [8] concluded that the odds of gay and bisexual men experiencing an anxiety or mood disorder over their lifetime were twice those of straight men. In a convenience sample, Cochran and Mays [9] found a 32.6% prevalence of depression among BSMM. Also, in other studies African American gay men were observed to have an increased probability of feeling anxiety and isolation but were unlikely to seek professional help [10, 11].

Studies show longstanding trends in the high rates of violence, discrimination, and harassment (VDH) perpetuated against sexual minorities [12]. Graham and colleagues' [13] study found a negative effect of violence and discrimination on the mental health status of BSMM. Similarly, Crawford et al. [14] found negative associations between experiences of perceived racist events and life satisfaction and anxiety among BSMM. Finally, in a probability sample of 912 Latino men who had sex with men (MSM), recruited from social venues in New York, Miami, and Los Angeles, 10% reported that they had experienced violence as an adult because of their sexual orientation or femininity [15]. Other factors influencing mental health outcomes among BSMM may include racial identity development, internalized homonegativity, and coping strategies.

Racial and sexual identity components are core for BSMM [16, 17]. Graham et al. [13] explored the psychosocial health of BSMM and found that BSMM were challenged in developing a healthy identity. They concluded that struggles related to the unique experience of being BSMM such as negative attitudes and beliefs concerning their race and sexuality as well as gender conformity pressure contributed to depression and anxiety. A study by Crawford et al. [14] of African American gay and bisexual men found that BSMM with a positive racial identity were significantly less likely to have mental distress and more likely to have greater life satisfaction and self-esteem than BSMM with less positive racial identity.

Positive racial identity is denoted as "the process of development by which individual members of various socioracial groups overcome the version of internalized racism that typifies their group in order to achieve a self-affirming and realistic racial-group or collective identity" [18]. According to Helms' [19] model of Black racial identity, the least affirming status is preencounter. The next racial identity phase, encounter, commences once the individual has a personal thought-provoking experience with race that leads the individual to question his racial identity. The third phase, immersion, involves coming to understand the worth and significance of the individual's ethnic heritage. The last stage, internalization, is characterized by affirming and valued perception of oneself. Pierre and Mahalik [20] examined Black racial identity development as a predictor of psychological distress and self-esteem among a college and community sample of 130 Black men of undocumented sexuality aged 18 to 25 years. They found that preencounter and immersion racial identity attitudes were associated with more psychological distress and less self-esteem, while internalization attitudes were associated with greater psychological well-being.

Theoretically, internalized homonegativity hinders the course of healthy identity development [21]. Internalized homonegativity can be described as negative, disapproving, or repudiating views or perceptions of homosexuality or related sexuality components, that persons with a same sex orientation have accepted, believed, or taken on from an external source [22, 23]. Rosser et al. [24] examined the relationship between homosexuality, internalized

homonegativity, and mental health in MSM and found that internalized homonegativity, but not homosexuality, was an important predictor of depression in homosexual men.

Coping has been defined as the views and behaviors individuals use to deal with burdens they identify as exceeding their resources [25]. Coping mechanisms include efforts to change the pathway stress takes (problem-focused coping) and efforts to control emotional reactions to stressors (emotion-focused coping). A study by Peterson and colleagues [26] found that psychosocial resources, including optimum social support and spirituality, mediated the effects of stressors on depressive mood among Black MSM. An investigation that included both Black and White homosexual men found that BSMM were more likely to use disengaged coping than White gay men [27]. Other investigations have found a statistical relationship between perceived racism and disengaged coping [28, 29]. Finally, a study of a diverse sample of gay men by David and Knight [30], found that though BSMM were more likely to use disengaged coping styles, they did not appear to experience more negative mental health outcomes as a result.

Few studies have examined the relationships of DH, racial and sexual identity development, and coping with depressive symptoms and anxiety among BSMM. This study therefore examined these relationships. This study focused on the following research questions.

- (1) Are internalized homonegativity and DH significantly positively associated with depression and anxiety?
- (2) Is Black identity achievement significantly negatively associated with depression and anxiety?
- (3) Is there an interaction effect between internalized homonegativity and Black identity achievement on depression and anxiety?
- (4) Does coping skill level moderate the associations between depression and anxiety, and internalized homonegativity, DH, and Black identity achievement?

Better understanding mental health determinants among BSMM will enable population health practitioners, medical service providers, and policymakers to help prevent mental distress and disorders, effectively promote overall psychosocial health, and intervene early in distress sequelae.

2. Methods

2.1. Design and Sampling. An observational cross-sectional study design was used. The University of North Carolina, Greensboro, served as the primary study site; however, participants were recruited and surveyed at a variety of sites. Volunteer snowball sampling was employed. The study was approved by the university Institutional Review Board (IRB). Posters, flyers, and palm cards were distributed at community facilities and events, and letters were drafted and sent to e-mail and physical address listservs.

Additionally, advertisements were placed in local newspapers and on social networking websites. The materials included a short description of the study, including its purpose and the contact information of study personnel, as well as a web link for the project. Men 18 years old or over who self-identified as being of African descent (Black, African American, etc.) and as men who had sex with, desired to have sex with, or eroticized sex with men were enrolled in the study. Informed consent was obtained from participants, and they were provided a unique identifier and password to complete a battery of surveys at a secured website accessed from their own personal computer or laptop computer provided for them. Participants were required to answer each question before moving to the next; the battery of surveys took between 30 and 45 minutes to complete, after which participants received a \$25-gift card to Target.

2.2. Measures

2.2.1. The Center for Epidemiologic Studies Depression Scale (CES-D). The center for epidemiologic studies depression scale (CES-D) [31] was developed for use with general adult populations (aged 18 or older). This 20-item self-report scale measures depressive symptoms during the previous 7 days, and responses (0-rarely or none of the time, 3-most or all of the time) are summed. Sample items include “I felt sad,” “I felt lonely,” and “I felt fearful.” Positive items are reverse-scored, and the possible range of scores is zero to 60, with higher scores indicating more symptoms.

Cronbach’s alpha for the CES-D in this study was .95. The CES-D may underestimate likelihood of depression given recent evidence indicating that the CES-D may not be an accurate screening tool for ethnic minorities [32]. Depression scores in different racial/ethnic subpopulations might be biased by response patterns that vary between racial groups, not because a community has more or fewer symptoms or disorders, but because the subpopulation articulates psychopathology in a manner not captured by measures normed primarily in a different ethnic group [33]. No better scale has been identified, and given its widespread use among Black and MSM populations, the CES-D was used in this study.

2.2.2. State-Trait Anxiety Inventory (STAI-S). The STAI-S [34], which was used to measure anxiety, is a 20-item questionnaire intended to evaluate current anxiety and has been used with African American populations. Sample items include “I feel calm,” “I feel tense,” and “I feel upset.” The STAI has two factors, anxiety-present and anxiety absent. Anxiety absent items are reverse-scored. Each item is rated from 1 (not at all) to 4 (very much so) to reflect the level of each affect statement, and responses are summed.

Higher scores represent greater anxiety. The STAI-S has demonstrated satisfactory internal consistency and test-retest reliability in numerous studies [35]. Additionally, it has demonstrated satisfactory convergent and discriminate validity with other measures [36, 37]. Cronbach’s alpha in this study was .96.

2.2.3. Demographic Information Sheet. Demographic information sheet asked 10 questions focused on three components of sexuality (orientation, identity, and role), socioeconomic status (educational attainment and annual income), religious affiliation, age, and history of depression diagnosis.

2.2.4. The Black Racial Identity Attitudes Scale (RIAS-B). The black racial identity attitudes scale (RIAS-B) was developed to identify stage placement in the Cross model of minority identity development [38]. The model posits that, as African Americans become aware that they are oppressed, their attitudes toward themselves, their own group, other ethnic minority groups, and members of majority cultures take shape in a way that leads to a central sense of self [39]. The tool consists of 50 statements to which participants are asked to respond using a Likert-type scale (1-strongly disagree, 5-strongly agree). Some statements indicate concrete actions, some are descriptive terms, and others are statements of personal values and beliefs. Items reference the current state.

Subscales are scored by averaging items so that the respondent receives a scale score for each of four types of racial identity attitudes (preencounter, encounter, immersion/emersion, and internalization/commitment). The highest mean subscale score reflects placement at that particular racial identity attitude stage. Sample items include “the people I respect most are White,” “being Black just feels natural to me,” “and White people can’t be trusted.” Cronbach’s alpha for subscales have ranged from .51 to .80. In this study, Cronbach’s alphas were Stage 1— $\alpha = .89$, Stage 2— $\alpha = .56$, Stage 3— $\alpha = .70$, Stage 4— $\alpha = .86$.

2.2.5. Internalized Homonegativity Inventory (IHNI). A 17-item revised version of the IHNI was used in this study. The IHNI was adapted for use among BSMM because it was originally validated on 241 gay men primarily of European descent [40], it has only been used once among a predominantly Black sample where potential validity issues were raised, and there were men in the current study who identified in diverse ways not referenced in the original IHNI (e.g., bisexual, SGL). Study investigators and a panel of experts assessed translation validity by examining face and content validity of items in the 3 subscales (personal homonegativity, gay affirmation, and morality of homosexuality). Language referencing homosexual and gay was broadened to encompass a wider range of behavior and identity, and two items were added to the personal homonegativity subscale: “I feel ashamed when I see or am around other sexual minority men who are obviously homo/bisexual or who are acting gay/SGL” and “I believe homo/bisexual men are weak.”

Principal axis factor analysis with varimax rotation suggested deletion of 8 items (four from the first subscale, three from the second, and one from the third). The original tool and the modified tool were highly correlated with an $r = .96$, which establishes convergent validity in that the tools theoretically should be related to each other. Factor analysis revealed a slightly better performance of the altered IHNI as compared to the original in this sample. The revised

IHNI factor solution resulted in a decrease of items that crossloaded and appeared slightly more meaningful in that it better reflected the hypothetical factor structure presented in the construct definition of internalized homonegativity.

Sample items include “I am proud to be homo-/bisexual,” “I believe that it is morally wrong for men to have sex with other men,” and “I sometimes resent my sexual orientation.” IHNI items reference current state, responses (1-strongly disagree to 6-strongly agree) are summed, and positive items are reverse-scored. Higher scores on the personal homonegativity and morality of homosexuality subscale and lower scores on the gay affirmation subscale represent more IHNI, where higher scores on the total IHNI represent greater internalized homonegativity. Cronbach’s alphas for the adapted 17 item IHNI used in this study were total— $\alpha = .97$, Factor 1— $\alpha = .95$, Factor 2— $\alpha = .91$, Factor 3— $\alpha = .89$.

2.2.6. Perceived Ethnic Discrimination Questionnaire-Community Version (PEDQ-CV). The PEDQ-CV is used to evaluate perceived ethnic discrimination and was used in this study as a measure of discrimination and harassment (DH). This scale is a modification of the PEDQ-Revised B, developed by Contrada and colleagues [41] to evaluate perceived exposure to discrimination. To develop the community version, the original items were phrased in simpler language and adapted to reflect the everyday experiences of community-dwelling adults [42]. The lifetime discrimination scale (34 items) which includes four subscales (exclusion/rejection, stigmatization, discrimination at work/school, and threat/aggression) and the discrimination in different settings component of the PEDQ-CV were used. Sample items include “people ignored you,” “people do not trust you,” and “people actually hurt you.”

Participants were also asked to indicate whether race, sexuality, both race and sexuality together, or one or the other, but they could not tell which, was primarily involved in their experience of each type of DH in the discrimination scale and in each community sector in the settings component. The measures are used to assess past-year experiences in social and interpersonal contexts. They have been used with Latino and Black subjects. The past-year discrimination responses (0-never happened to 4-happened daily) are summed, with higher scores representing more DH. Cronbach’s alpha in this study was .98.

2.2.7. Brief COPE. The brief COPE is a shortened adaptation of the COPE Inventory [43]. Comprised of 28 items that measure both active and disengaged coping styles, it includes 14 subscales (of 2 items each) that reflect coping activities. Sample items include “I criticize myself,” “I make jokes,” and “I learn to live with it.” Subscales were combined into two factors: disengaged coping and active coping, consisting of six and eight subscales, respectively; disengaged coping items were reverse-coded.

Active coping includes use of emotional support, use of instrumental support, positive reframing, planning, humor,

acceptance, and religion. Disengaged coping includes self-distraction, denial, substance use, behavioral disengagement, venting, and self-blame. Items ask respondents to consider how they usually feel, think, and respond given stressful or depressing situations or events; response options range from 0 (I usually do not do this at all) to 3 (I usually do this a lot). Cronbach’s alpha in this study was .88.

3. Results

3.1. Demographics. Seventy-seven percent of participants indicated that they had sex with or desire to have sex with males only, 77% self-identified as gay, and 13% identified culturally as same gender loving (Table 1). Thirty-nine percent had completed a two-year degree or had some college education, and 31% had completed a four-year degree. The average annual income of participants was \$25,275, with a range of \$0 to \$68,000. The average age was 31 years, with the youngest participant being 19 and the oldest 50; 50% designated their religious affiliation as Christian, and 33% designated themselves as spiritual. Thirty-three percent of participants said they had been diagnosed with depression by a healthcare professional, 30% had CES-D scores above 15 indicating likelihood of depression, and 33% had STAI scores above 39, indicating likelihood of anxiety. Ten percent of participants had CES-D scores and STAI scores indicating both likelihood of depression and anxiety and just 20% of participants scored into a racial identity development stage lower than internalization.

In the past year 95% of participants had experienced discrimination and harassment (DH) at least once, and on average 11% of participants experienced DH weekly, and 5.3% experienced DH daily. Of those experiencing any DH in the past year, 44% indicated their race as being primarily involved in the majority of DH they had experienced in the past year and 32% indicated both race and sexuality as being primarily involved in the majority of DH they had experienced (Table 2). In the past year, 52% of participants had experienced DH in public places; 43% had experienced DH in retail, customer services, or other business settings and 35% in the criminal justice system. Of those experiencing DH in public places and retail/customer service, 35% and 46%, respectively, indicated both their race and sexuality together as being primarily involved and of those experiencing DH in the criminal justice system, 62% indicated that their race was primarily involved.

3.2. Regression Analysis. Initially, all base variables were entered into a regression model predicting CES-D and STAI scores, with interaction terms added last, in order to determine statistical associations for the full theorized model before beta coefficient significance, strength of dependent and independent variable correlations, and amount of variance accounted for were taken into consideration in specifying the final model. Following this, stepwise independent multiple regression analysis was used to estimate the most parsimonious linear relationship between scores

TABLE 1: Demographics.

	N	%
Sexual orientation		
Homosexual	47	77
Bisexual	14	23
Sexual identity		
Gay	46	77
Same-gender-loving	8	13
In the life	1	2
Bisexual	3	5
Other	2	3
Highest level of education		
High school	7	12
Some college/2 yr degree	24	39
4 yr degree	19	31
Terminal degree	11	18
Religious affiliation		
Christian	30	50
Spiritual	20	33
None	10	17
Depression diagnosis	20	33
CES-D Score >15	18	30
STAI Score >39	20	33

N = 61. Age range = 19–50 years. Mean age = 30.7 years.
 Annual income range = 0–\$68,000. Mean income = \$25,275.

on the CES-D and STAI independently and internalized homonegativity, racial identity development, DH, and intersection and interaction terms. To include a proxy measure of racial and sexual identity intersectionality, an internalized homonegativity and racial identity development interaction term was included in the regression equation. The IHNI subscales for this interaction term were reverse coded, such that higher total scores on the IHNI reflect less internalized homonegativity.

It was theorized that those possessing both higher levels of internalized homonegativity and lower levels of positive racial identity would experience greater levels of depression and anxiety than those with lower levels of internalized homonegativity and greater levels of positive racial identity. We recognize that inclusion of this interaction assumes additive identity properties and is not a true measure of intersectional identity, but in absence of any available better quantitative measure authors assessed it necessary to include this proxy term at minimum so as not to ignore the role of intersectional identity. Additionally, research suggests that coping level may moderate the relationships between IHNI, RIAS, IHNI-RIAS, and PEDQ and CES-D and STAI scores; therefore coping and coping-independent variable interaction terms were also included in the regression equation. Internalized homonegativity and Black identity achievement are both rooted in a developmental framework, and therefore age, which is closely related to maturation

TABLE 2: VDH, Identity, and Sector.

	N	%
VDH—Implicated Identity		
Race primary	25	44
Sexuality primary	11	19
Race & Sexuality primary	18	32
Cannot tell which	3	5
VDH—Sector Prevalence		
Public	31	52
Retail	26	43
Criminal justice	21	35
Entertainment Venues	20	33
Religious Institutions	19	32
Workplace/Job	19	32
School/College	18	30
Medical Services	14	23
VDH—Sector—Identity		
Public/Both	11	35
Retail/Both	12	46
Criminal justice/Race	13	62
Entertainment/Both	11	55
Religious/Sexuality	11	58
Workplace/Both	10	53
School/Both	10	56
Medical Services/Both	8	23

Proportion of participants indicating which identity component was primarily involved in the majority of VDH experienced in the previous year, community sectors with the highest prevalence of VDH, and primary identity component implicated in VDH across sector.

and identity development, was included in the equation as a covariate.

Likewise, a social determinant of health, socioeconomic status, was included in the equation as a covariate. Education and income, which influence resource acquisition, were used to operationalize socioeconomic status. The variables age, education, income, RIAS, IHNI, RIAS-IHNI intersection, PEDQ, coping, and four coping interactions (c-RIAS, c-IHNI, c-RIAS-IHNI, c-PEDQ) were selected to test for inclusion in the model (Table 3). Cases with missing data were excluded listwise.

The variables education, income, RIAS, coping, RIAS-IHNI intersection, and c-RIAS interaction were significantly negatively correlated with CES-D scores ($P < .05$), and the variables IHNI, PEDQ, and c-PEDQ interaction were significantly positively correlated with CES-D scores ($P < .05$). The variables age, c-IHNI, and c-RIAS-IHNI were not significantly correlated with CES-D scores. The variables RIAS, coping, and c-RIAS interaction were significantly negatively correlated with STAI scores ($P < .01$) and the variables IHNI, PEDQ, RIAS-IHNI intersection, and c-PEDQ interaction were significantly positively correlated with STAI scores ($P < .01$). The variables education, age, income, c-IHNI, and c-RIAS-IHNI were not significantly correlated with STAI scores.

TABLE 3: Mean Scores and Standard Deviations of Dependent and Selected Predictor Variables.

Analysis Measure	Mean	Std. Dev.
CES-D	13.78	12.67
STAI	38.30	13.97
PEDQ	11.24	20.50
IHNI	30.98	17.21
RIAS	3.67	.82
Cope	54.46	13.32

$N = 54$.

With the base variables education, age, income, RIAS, IHNI, PEDQ, coping, and RIAS-IHNI entered into regression models (CESD, $F = 11.73$, $P < .01$; STAI, $F = 7.38$, $P < .01$), the beta coefficients for IHNI and PEDQ were significant ($P < .05$) for both models predicting CES-D and STAI scores. Every one unit increase in the IHNI accounted for a .63 increase in CES-D scores and a .7 increase in STAI scores, and every one unit increase in PEDQ accounted for a .23 increase in CES-D scores and a .25 increase in STAI scores. After the interaction terms were added to the models (CESD, $F = 10.79$, $P < .01$; STAI, $F = 7.06$, $P < .01$), the beta coefficients for the IHNI and RIAS-IHNI intersection were significant ($P < .05$) for both models predicting CES-D and STAI scores. Every one unit increase in the IHNI corresponded to a 1.97 increase in CES-D scores and a 3.47 increase in STAI scores, and every one unit increase in the RIAS-IHNI intersection corresponded to a .71 decrease in CES-D scores and a .94 decrease in STAI scores.

The PEDQ beta coefficient became nonsignificant, and the RIAS beta coefficient remained nonsignificant for both models predicting CES-D and STAI scores even though the RIAS-IHNI intersection beta coefficient was significant. This suggests that the IHNI variable was driving the significance of the RIAS-IHNI intersection beta coefficient. When the RIAS, IHNI, and the RIAS-IHNI intersection were entered into models, both the RIAS and the RIAS-IHNI intersection beta coefficients became nonsignificant for both models predicting CES-D and STAI scores (not shown). Only the IHNI beta coefficient remained significant.

Using stepwise multiple regression analysis the variables PEDQ and IHNI were entered into the final model for both the CES-D and STAI while age, education, income, RIAS, the RIAS-IHNI intersection, coping, and the four coping interaction terms (c-RIAS, c-RIAS-IHNI, c-IHNI, c-PEDQ) were excluded (Table 4). Taking into account the number of variables in the model and the number of observations, 64% of the variance in CES-D scores and 53% of the variance in STAI scores were explained by PEDQ and IHNI together. PEDQ alone accounted for 51% of the variance in CES-D scores, with IHNI accounting for an additional 13%. IHNI alone accounted for 46% of the variance in STAI scores, with PEDQ accounting for an additional 7%.

The overall models were significant (CES-D, $F = 47.89$, $P < .001$; STAI, $F = 31.10$, $P < .001$); there was a linear relationship between PEDQ and IHNI and CES-D and STAI scores. Holding IHNI constant, for every 1 unit increase in

TABLE 4: Summary of Stepwise Multiple Linear Regression Analysis.

Predictor Variable	Step	R	Adj. R^2	ΔR^2	Sig. ΔR^2	β	T	P
Depression								
PEDQ	1	.72	.51			.47	4.67	<.001
IHNI	2	.81	.64	.13	<.001	.45	4.44	<.001
Anxiety								
IHNI	1	.47	.46			.49	4.30	<.001
PEDQ	2	.55	.53	.07	.004	.34	3.01	.004

PEDQ: Perceived Ethnic Discrimination Questionnaire; IHNI: Internalized Homonegativity Inventory. The Beta listed is the standardized value.

PEDQ, CES-D scores increased by .29, and holding PEDQ constant, for every 1 unit increase in IHNI, CES-D scores increased by .33. Holding PEDQ constant, for every 1 unit increase in IHNI, STAI scores increased by .41, and holding IHNI constant, for every 1 unit increase in PEDQ, STAI scores increased by .24.

4. Discussion

Experience of DH and internalized homonegativity explained a large portion of the variance in depression and anxiety among this sample, as in other studies [13–15, 21, 24, 44–47]. Though experience of DH explained more of the variance in depression than internalized homonegativity and the reverse was true for anxiety, both DH and internalized homonegativity were very strongly associated with both depression and anxiety. A high percentage of the sample screened positive for likelihood of both depression (30%) and anxiety (33%), far higher percentages than in the general population (estimated between 9.3–21% for depression and 11–29% for anxiety) [1, 2] and higher than the 22% found for depression and comparable to the 36.7% found for anxiety among Black gay, lesbian, and bisexual respondents by Meyer et al. [48] and the 32.6% found for depression by Cochran and Mays [9]. The average CES-D score was 13.78 and the average STAI score was 38.30, which are roughly equal to the 13.96 and 37.5, respectively, found among a sample of similar aged BSMM in the study by David and Knight [30].

Discrimination and harassment appeared to be chronic among participants in the current study. In the past year, they reported experiencing more DH and experiencing DH more often than reported in samples of predominantly White sexual minority men (which range from 3.7% to 76%) [7, 12, 49]. Race independently and race and sexuality together were implicated most by participants as driving factors in their experience of DH. This may be further evidence of the essential role of intersectionality in understanding and contextualizing the relationship between DH and mental health outcomes among BSMM.

Participants experienced DH most often in public places, retail settings, and the criminal justice system. This finding differs somewhat from the original PEDQ-CV validation study, in which settings with the most reported DH included

public places, work, and school. The differences, however, may be a result of the inclusion of Latino and women subgroups in the validation study since their experiences may differ from those of BSMM. Most participants in this study indicated both race and sexuality together as being primarily involved in their experiences of DH in most community settings, except in the criminal justice system, where participants cited race most often, and in religious institutions, where participants cited sexuality most often. Racial identity development did not appear to play a significant role in depression and anxiety in this sample, though the lack of variability in stage placement of participants may in part explain this.

An overwhelming majority of participants fell in the immersion and internalization stages, while very few participants were in the preencounter or encounter stages. Perhaps consequently, neither the racial identity development, identity development intersection, nor their coping interaction measures made it into the final models. Given the moderately strong univariate associations between both depression and anxiety and the race and sexual identity intersection measure, and the significant RIAS-IHNI intersection beta coefficient when all variables were entered into a model without forcing any variables to drop, possibly a different or better measure of Black identity development would have produced different results when forcing variables with nonsignificant coefficients to drop from the model. It appears that either the sample distribution was skewed on stage placement or the measure was not able to adequately differentiate participants across the stages. However, if racial identity development does not in fact play a major role in explaining depression or anxiety outcomes among BSMM, this finding does not support previous findings in the literature on racial identity development as a predictor of mental health outcomes among Black men with undocumented sexuality [20, 50].

Level of positive coping was not a significant indicator of depression and anxiety in this sample and thus neither confirm findings among samples of predominately White gay men [51] nor the study conducted by Peterson et al. [26]. This finding is similar to that of David and Knight [30]. In light of these findings, we share David and Knight's [30] conclusions that perhaps resiliency may be a more important mitigating factor for depression and anxiety than positive coping. Age and income were excluded variables that were close to being included in the final model for depression, and age and Black identity achievement variables were close to being included in the final model for anxiety. Perhaps with a larger sample size, and thus greater power, the relationship between depression and age and income, and anxiety and age and Black identity would be significant.

Additional limitations in this study include the use of snowball sampling, which can produce samples that may not be accurate reflections of the target population, and thus the results may not be indicative of the actual trends within the target population. Also, given the small sample size coupled with stepwise regression analysis and a high number of independent variables for possible model inclusion, power is low, R squared values may be overestimated, and confidence intervals for effects and predicted values

may be overly narrow. Further research should focus on qualitative and quantitative exploration of the causes of VDH in community settings in which VDH is most prevalent, development and validation of tools for use among BSMM, and further examination of identity development among BSMM, including the influence of spirituality and religious institutions.

The findings of this study suggest that efforts should be increased to implement antidiscriminatory policies in the community settings where VDH is most prevalent, public health practitioners should work to decrease negative attitudes and beliefs regarding ethnic and sexual minority identities, and service providers should help clients alleviate their internalized homonegativity and avoid VDH. Additional implications of findings for treatment and public health initiatives include training clinicians on signs and symptoms of depression and anxiety among BSMM, expansion of mental health services for this subpopulation, and social marketing campaigns that target internalized homonegativity. This inquiry sought to produce scientific evidence that could inform health and quality of life promotion related to VDH and identity development. Findings of this study further develop the conceptual framework of mental disorder acquisition by BSMM.

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Research Article

Revisiting Shimoda's "Shuuchaku-Kishitsu" (Statothymia): A Japanese View of Manic-Depressive Patients

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Although the empiric paradigm is now dominant in academic research, in Japan quite a few psychiatric clinicians still take phenomenological-anthropological approaches into consideration, especially when they address manic-depressive illness with typical endogenous features. This is because Shimoda's concept of "shuuchaku-kishitsu" (statothymia) has been widely accepted, together with other phenomenological views of continental origin. In the present paper the author first delineates Shimoda's concept which is based on observations of patients' personality features and the characteristics of their emotionality. He then attempts to refine this concept in spatiotemporal terms, presenting the view that in patients the past self tends to adhere to the present self (the term "shuuchaku" means "adhering to" or "preoccupied with"). He also considers that patients tend to incorporate "soto" (outer space) into "uchi" (inner space), where they believe that symbiotic relations are preserved. Finally, he argues the clinical significance of the presented views in the cultural milieu in which Japanese psychiatric practices are situated.

1. Introduction

About twenty years ago, DSM-III [1] was introduced to Japan and began to replace traditional diagnostic systems stemming from descriptive and phenomenological psychopathologies such as those by Jaspers [2] and Schneider [3]. However, this does not necessarily mean that every psychiatric practice now in Japan is performed on the paradigm of logical empiricism, which constitutes the mainstream of current psychiatry. As is often the case in other domains of activities in Japan, Japanese psychiatry is continuing to adopt a double standard. Most academic research follows an evidence-based method, whereas quite a few psychiatrists consider that the current results obtained by this method may fail to address insights backed by clinicians' long-term experiences.

The tendency to adopt a double standard is especially prominent in the field of depressive illness. Although the dichotomy between endogenous/non-endogenous depressions has long been abandoned in DSM criteria, many Japanese clinicians still hold that core endogenous depression harbors specific features distinguishable from other types of depression such as neurotic depression, depressive mood

manifested by people with autistic traits and so forth. One of the reasons for this tendency in Japan is that DSM criteria of major depression do not appear to delineate, either biologically or phenomenologically, a homogeneous group. This argument is also raised in Anglo-American regions. For example, Taylor and Fink [4] attempted to revive the notion of melancholia to delineate a more homogenous group of endogenous depression than the group of major depressions defined by DSM criteria. Another reason, which may be more specific to Japan, is that Japanese psychiatry has a rich tradition of phenomenological-anthropological approaches. In particular, Shimoda's notion of "shuuchaku temperament [5]" was an outstanding contribution of Japanese origin to these approaches, along with other theories of continental origin which revealed important roles of premorbid personalities and precipitating situations for the genesis of endogenous depressive illness.

To sum up, Japanese clinicians prefer a more holistic view. More concretely speaking, Japanese psychiatrists, especially those familiar with phenomenological psychiatry, emphasize in their diagnosing process not only the melancholic features of a symptomatic level as described in the DSM

but also the personality traits and precipitating situations to delineate patients with endogenous features. The author addresses, in the present paper, patients with mood disorders who manifest endogenous features.

After first introducing Shimoda's notion, the author then argues what kind of modification of this notion is required today. Finally, he underscores the significance of the present approach, taking into consideration the cultural milieu of Japanese psychiatric practice.

2. The Concept of Shimoda's "Shuuchaku Temperament"

In 1941 Shimoda proposed the concept of "shuuchaku kishitsu" or "shuuchaku temperament (kishitsu = temperament)." This concept consisted of a typological description of manic-depressive patients' personalities and a hypothesis on the characteristics of their emotionality. (In the present paper the author uses the term "manic-depressive patients" to identify those with typical endogenous symptoms. It should also be stated here that the present author, together with Shimoda, does not adopt a binary position. In other words, he does not consider unipolar and bipolar disorders to be sharply distinguishable from one another.) Shimoda considered that manic-depressive patients, outside of their manic-depressive phases, are quite reliable persons in society and conscientiously fulfill obligations and responsibilities. He called this patient trait a "shuuchaku personality." Shimoda also considered that their emotions, once aroused in relation to something, tend to persist and not easily diminish. He regarded this characteristic of their emotionality, which he called a "shuuchaku temperament," as the neurophysiological basis of their disease. Patients with this type of personality and emotionality cannot stop overworking themselves, making every effort to preserve reliable interpersonal relationships, and so forth, and consequently fall into a depressive or manic phase. Even today the distinction of social roles between men and women is more marked in Japan than in Western countries. The overinvolvement found in a premelancholic or premanic phase in people with "shuuchaku personality" usually refers, in men, to their vocation, whereas, in women, to maintaining the order of the family or their interpersonal relations. This distinction may be becoming less marked in the current sociocultural changes in Japan. However, one of our studies [6] discloses that even in a modern Japanese enterprise women are more vulnerable to interpersonal relationships, while for men achievements in their vocation are crucial to their mood conditions.

In ordinary Japanese usage the word "shuuchaku," originally a Buddhist term meaning "being preoccupied with" or "sticking with" something, has rather negative connotations, since Buddhism considers it indispensable to be free of preoccupations with worldly things as one tries to achieve an ideal mental state. In Shimoda's concept, however, the word "shuuchaku" merely refers to the persistence of an emotion that is neurophysiological in nature. When Shimoda's concept was introduced to Germany [7], "shuuchaku temperament" was translated into the term "statothymie" or

"immobilitismie," which means the immobility of patient emotions (stato = immobility, thymie = temperament).

3. Influence of the "Shuuchaku Temperament" Concept on Psychiatric Research and Practice in Japan

The concept of "shuuchaku temperament," especially the typological description of the "shuuchaku-personality" of manic-depressive patients, was broadly accepted in Japan. Most Japanese psychiatrists agreed that those who are highly esteemed and valued in terms of their work and interpersonal reliability manifest depressive or manic symptoms after they make every effort to meet others' expectations and to fulfill their responsibilities. Shimoda's schema has both anthropological and physiological connotations. Patients' inability to meet others' expectations and fulfill their responsibilities undermines the basic ground of their self and precipitates the outbreak of the disease. Another interpretation is that their "shuuchaku temperament," that is, the emotion which has once been aroused and does not diminish, is a persistent burden on their neurophysiological systems and results in the outbreak of not only a depressive but sometimes also a manic phase.

In the 1970s, Tellenbach [8], in the second edition of his book *Melancholie*, referred to Shimoda's concept and pointed out the similarity with his own notion, "Typus melancholicus (melancholic type)." His book was immediately introduced into Japan, widely accepted, and triggered vigorous discussions about the personality of manic-depressive patients, both theoretical and empirical, among researchers [9–13]. During this period the relation and the differentiation between "shuuchaku personality" and other personality traits were also investigated. The relation between "shuuchaku personality" and obsessive-compulsive personality (Salzman) [14] is of notable importance. As Kasahara [15] puts it, although "shuuchaku personality" also has an obsessive trait, its obsession is directed mainly toward social responsibilities and toward the reliability of *interpersonal* relationships. This indicates that it includes the syntonic moments. According to Bleuler [16] and Kretschmer [17], syntonic people highly value harmonious and reliable *interpersonal* relations, whereas people with typical obsessive-compulsive traits are preoccupied with *personal* domain (Figure 1). Zerssen et al. [18] elaborated on the Munich Personality Test, a questionnaire based on numerous clinical descriptions of premorbid personality traits of patients suffering from schizophrenia, unipolar and bipolar disorders, and neuroses. The MPT is composed of five dimensions, that is, extraversion, neuroticism, frustration tolerance, and rigidity and schizoidia. The dimension of rigidity is reminiscent of "shuuchaku personality," however the MPT also does not distinguish the rigidity in interpersonal and personal domains.

Although neither "shuuchaku-temperament" nor "Typus melancholicus" attracted much attention in countries other than Japan and Germany, both concepts show close parallels with American psychoanalytical studies by Cohen et al. [19],

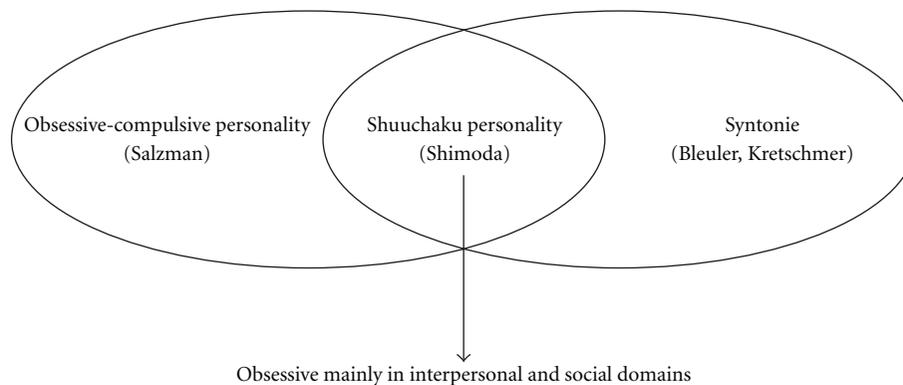


FIGURE 1: Obsessive-compulsive personality (Salzman), Shuuchaku personality (Shimoda), and Syntonie (Bleuler, Kretschmer).

Arieti [20], and Arieti and Bemporad [21], all of whom pointed out the strong concern of manic-depressive patients with social values and achievements. The main difference between these studies and the concepts of Shimoda and Tellenbach is that these psychoanalytical studies laid emphasis on the structural fragility of their patients' character that underlies their apparently desirable social adjustment, while Shimoda and Tellenbach principally focused on the aspects of their personalities, which are positively valued by society. Cohen pointed out patients' dependence on having authority manipulated into giving them approval and their lack of interpersonal sensitivity to perceive others as persons who are different from themselves. According to Arieti and Bemporad, such patients are bargaining their autonomy, which is oriented toward social achievements in order to elicit nurturance from an authoritative person, whom Arieti called "the dominant other."

4. Significance and Limitations of the "Shuuchaku Temperament" Concept in Today's Psychiatric Practice in Japan

In what follows, I present an overview of the significance and the limitations of Shimoda's description of the manic-depressive personality (shuuchaku personality) and his hypothesis on the characteristics of their emotionality (shuuchaku temperament) in today's psychiatric practice.

The "shuuchaku personality" is predominant even today among those who manifest typical endogenous symptoms of a melancholic type, especially in their middle age, despite the change in Japanese society over the past several decades.

However, not all endogenous manic-depressives in Japan today belong to this personality type. Above all, quite a few patients of the younger generation who manifest distinctive endogenous symptoms do not show considerable reliability in society and are even sometimes rather maladjusted. These patients often have the bipolar II disorder according to the DSM criteria or belong to the "soft bipolar spectrum" defined by Akiskal and Mallya [22]. In exemplary cases, these patients appear satisfied with the social role which they have decided to adopt in their hypomanic phases, whereas in their depressive phases they begin to suffer from the discrepancy

between their own wishes and the social role they once decided to adopt. For that reason, their mood swings make it difficult for them to establish a stable social adjustment. People with the typical "shuuchaku personality" have already established their social identity. "Overidentification" with their social role [23] characterizes them and constitutes the background of future outbreaks of manic-depressive phases, whereas there is also a group of patients whose mood changes are already manifested and these mood changes are in parallel with their unstable life course and their difficulties in establishing stable social identities.

Their interpersonal relations are also unstable. Akiskal [24] pointed out in them the coexistence of interpersonal sensitivity and impulsive extroversion.

With regard to Shimoda's hypothesis on the characteristics of their emotionality, this hypothesis appropriately explains the cases in which overwork precipitates the manifestation of symptoms. In such cases the patients overwork themselves not only because of their strong sense of obligation but also because of their excessive affective involvement in their work. Their inability to avoid affective involvement, which is prominent in their premelancholic phases, results in a vicious circle, from which they fall into melancholic or manic phases.

However, this hypothesis also has some limitations. One is that in some patients this characteristic of emotionality cannot be regarded as an inherent predisposition as postulated by Shimoda. Some patients claim that when they were young they were able to deal with things without persistent preoccupation. In such patients the tendency of their emotions to persist should be regarded as a trait, which did not present itself until a certain point in time in their premelancholic period.

Another limitation is that there are many people in whom overwork as a result of persistent affective involvement does not precipitate manifestations of a disease. Paradoxically, some manifest depressive symptoms after they have become free from impositions (Entlastungsdepression, Schulte [25]). Also, in other cases, in which a loss of an important person or a change in surroundings constitutes factors precipitating a melancholic phase, the persistence of the emotion is not clearly demonstrated, because these cases are not

characterized by the persistent grief which would be the result of loss or change. Rather “not being able to feel grief” characterizes them (Schulte [26]). Nor, among patients in the “soft bipolar spectrum”, can persistent involvement in work be usually found to act as a precipitating factor.

5. Reconsidering the “Shuuchaku Temperament” Concept for an Improved Understanding of Manic-Depressive Patients in terms of Time

I would now like to reconsider the concept of “shuuchaku temperament” in order to broaden its validity. For that purpose I will focus on the term “shuuchaku” in its ordinary Japanese meaning (i.e., to stick to something) and pose the question, what is it that, the patients “stick to”? My assumption here is that, in terms of time, the patients stick to the past self, which could have been or which should have been but which was not. More precisely, the past self adheres to the present self of patients.

First, I would like to begin this reconsideration with the patients of “shuuchaku personality” or “Typus melancholicus” by referring to Tellenbach’s observation of the preoccupation with precision at work in this type of patients. Tellenbach pointed out in them “the preciseness, which holds them back,” meaning that they cannot bring their work to a conclusion and are always revisiting it to achieve “preciseness.” In them the self, which should or could have achieved preciseness but has not, remains stuck in the present. This “shuuchaku” or “sticking” drives the patients to continue working. In my opinion this “sticking” to their activities underlies the “persistent emotion” which Shimoda postulated as a predispositional basis of the disease, and *not* vice versa.

This feature, which I here call “shuuchaku activity,” characterizes the premelancholic phase of this type of patient, in whom the past self sticks to the present self, driving it continuously to be involved in activities that would improve preciseness. However, in the beginning of the melancholic phase the patients finally begin to lose the potential to achieve the results and to manifest symptomatic agitations, not only because the patients burn out in their attempt to complete an enormous amount of work but also because of the intrinsic excess of their activities themselves. At that moment the bond between the past and present self is lost. The patients come to be left in the present that has lost its continuity with the past, bereft of the drive for future activities. It is at this point that they are overtaken by what Von Gebattel [27] called “Werdenshemmung,” the impossibility of becoming.

The meaning of a loss of an important person or a change in his surroundings as a precipitating factor also becomes clear when we pay attention to this “sticking” feature (shuuchaku) lying deep inside the patient’s mode of existence in terms of time. In such a patient the past self, which was at one with his or her important persons and surroundings, still sticks to the present and drives the present self to reclaim them. However, in these cases, in reality there is no possibility from the very beginning for them to reclaim

them, while patients losing the preciseness of their work still have, at least in the beginning, the possibilities to reclaim preciseness through their own efforts. Thus, the loss of an important person or a change in surroundings could directly undermine the very drive they need for their activities. What the patients feel when faced with this fundamental loss of the basic ground of their activities is not grief.

Focusing on the “sticking” feature also sheds light on our understanding of the patients belonging to the “soft bipolar spectrum.” Because of their maladjustment these patients pose quite a contrast to patients with the “shuuchaku personality.” However, they often become maladjusted as a result of their tendency to seek an ideal social role. Even if they have decided to play a certain social role, they begin to entertain again the possibility of finding a better role, in the course of which they become gradually maladjusted. In them the past self, which has already made a certain decision but could have made a better one, sticks to the present self and drives it to make yet another decision.

As a whole, the “sticking” manifests in premelancholic or premanic situations as agitation, which is principally still not yet considered to constitute melancholic or hypomanic “symptoms” per se. In a working setting, it manifests as agitated overinvolvement in activities reclaiming the possibility of the ideal fulfillment of the task. When one experiences the loss of an important person or surroundings, it manifests as preoccupation with a past in which one harbored symbiotic relations with them. Even in young people who have already been afflicted with soft bipolar mood changes, it manifests as an endless indecisiveness, which makes it difficult for them to establish their social identities.

The sticking feature can also be considered to underlie the difficulties of the manic-depressive patients in changing a plan they have set up and their failures to make themselves open to unexpected events or others’ novel opinions. Generally speaking, one’s activities are only to some extent determined by the plan made in the past. However, in manic-depressive patients, the past self, which has set up a plan, strongly sticks to the present self, and this sticking makes it difficult for the present self to change the plan, since to do so would break the bond between the two selves and undermine the basic ground of the activities of the present self. Therefore they tend to exclude themselves from unexpected encounters with new things and encounters with others’ novel opinions. This understanding gives a clue to the well-known conservative attitude toward the life of melancholic patients [28]. It also distinguishes the meticulous preoccupation with the past in melancholic patients from the machine-like obsession of patients with autism.

6. “Shuuchaku Activity” and “Syntonie (Bleuler)”

This tendency of manic-depressive patients to exclude themselves from unexpected encounters especially when they are engaged in “shuuchaku activities” might seem to contradict “syntonie,” a well-known trait of manic-depressive patients. Bleuler [16] and Kretschmer [17] emphasized that, contrary to schizophrenics, manic-depressives are syntonically, meaning

that they show great receptivity to others and are capable of behaving in harmony with other people. The intense involvement in work based on obsessive planning, which might lead to the exclusion of encounters with others and the great receptivity to others, which might lead to the addiction to human contacts, are two apparently major contradictory traits of manic-depressive patients.

To understand the relation of these two traits, it is necessary to keep in mind the following two things.

First, the exclusion of unexpected encounters of manic-depressive patients does not involve their loss of contact with other people. Even if their intense involvement in work prevents them from being open to new experiences, they are working to meet others' expectations and they are also expecting rewards from others consciously or unconsciously. However, they are not open to others who appear to be outside of the relationship they are already engaged in.

Second, their great receptivity to others cannot be equated with openness to others. It is true that they live in harmony with other people but this is done only by attuning themselves to others or expecting others to attune themselves to them. They lack the capability of dealing with others as others who differ from them by nature, as Cohen pointed out.

The space composed of homogeneous people, where people are easily resonant with each other, can be called "inner space," whereas the space composed of heterogeneous people, where people must respect the differences among themselves, can be called "outer space." The Japanese especially have a marked tendency to live in the dichotomy between inner (*uchi*) space and outer (*soto*) space, and they assume a culturally specific stance toward it. In what follows, I would like to reconsider the concept of "shuuchaku-temperament" in terms of space, by asking what kind of space it is that the patients are sticking to.

7. Reconsideration of the "Shuuchaku Temperament" Concept in terms of Space with Reference to the "Uchi/Soto" Dichotomy

In Japan, an "uchi-" type relation is one of intimacy in a group such as a family or a community. In an "uchi" or inner space, a person can afford to indulge himself to some extent, relying on the consciousness that "we belong together" or "we understand each other." Members in an "uchi" space are required to help each other and share interests against the pressures from "soto" or outer space.

"Soto" or outer space indicates the outside of this "uchi" or inner space and is composed of people unknown or unfamiliar with each other. To establish a "soto-" type relationship in this space, one is required to play an appropriate social role and to follow public norms.

The distinction between "uchi" and "soto" cannot be made based only on the concrete concept of space. For instance, parents educate a child to behave in accordance with public norms. Although this education is conducted within families or in "uchi" space, it is directed toward "soto" or outer space. It is an important task of the family to provide

a child with the basis for its future behavior in "soto" space. This must be done within a family, which is principally an "uchi" or inner space.

What is prominent in Japanese society is its strong tendency to incorporate "soto" or outer space into "uchi" or inner space. For instance, human relations in companies are principally of the "soto" type. However, in Japan they often assume a pseudofamilial character and become "uchi-" type relations. In Japan, people are not accustomed, at least at the psychological level, to deal with the conflicts in "soto" space based on definite norms and contracts. Rather they consider it desirable to deal with them based on implicit common sense, which they believe in sharing. The more "soto" or outer space is incorporated into "uchi" or inner space, the more people are pressured into conforming to an implicit collective norm shared within "uchi" or inner space. At the same time "soto," which has not been incorporated into "uchi," tends to become the space where due respects are not paid.

Now let me return to manic-depressive patients and see how this "uchi/soto" dichotomy can contribute to understanding them in terms of space.

The patients of the "shuuchaku personality" or *Typus melancholicus* show a prominent concern to fulfill their social roles and responsibilities in "soto" or outer space. They attempt to make every effort to avoid the situation in which they fall in debt (Tellenbach [8]) in terms of their obligations and responsibilities in "soto-" type relations. However, further scrutiny often reveals that they are preoccupied with or stuck to the "uchi" or inner space in which they believe symbiotic relations can be preserved. In the previous chapter I pointed out that in some patients the tendency of their emotion to persist does not become apparent until a certain point in their premelancholic phase. It is often the case that such patients experience some disappointment in their relations in "uchi" space at that point. For instance, after having difficulties in maintaining a symbiotic relation with their family members, they come to be intensely involved in activities in "soto" or outer space, since involvement in this type of activity at least brings them opportunities to get results and, in addition, rewards from others. It is also often the case that patients implicitly try to restore symbiotic "uchi-" type relations through their efforts, which are apparently directed toward "soto" space. The future manic-depressives among Japanese workers overextend themselves not only to fulfill their responsibilities in "soto" space, but often do so expecting emotional rewards from their colleagues. They consciously or unconsciously expect that symbiotic relations of the "uchi-" type can be preserved in their working place if they work hard enough.

Those examples reveal the dynamics of manic-depressive patients with a "Shuuchaku personality," who harbor a strong preoccupation with "uchi-" type relations beneath their intense concern about social obligations to establish a façade in "soto" space. I think it is also worthwhile to keep this dynamic in mind for better understanding of those patients, whose dependency appears in the foreground, rather than hidden beneath their façade as a socially reliable person. Cohen et al. [19] pointed out that these patients do not

verbalize their request for others to meet their needs but rather convey it only by implication and that this attitude is interpreted by others as manipulation or coercion. I believe that these patients can convey requests only by implication since they experience their explicit request as “a debt to others” in “soto-” type relations, which they want to avoid by all means. They expect others to meet their needs in “uchi-” type relations, in which they believe explicit requests are not required.

Manic-type patients [29] are characterized by the evasion of restricted “uchi” or inner space, which puts implicit pressure on them, by seeking the broad “soto” (outer) space. But this does not mean that they are open to “soto” space in its intrinsic sense. Rather they seek “soto” space insofar as this “soto” space can be incorporated into “uchi” space. They just try to swallow “soto” space. This is supported by the fact that the public norms in “soto” space cause them anxiety and that they rebel against them. It is also confirmed by their attack against those in “soto” space who are not willing to attune themselves to them.

In current empirical personality studies, “neuroticism” is often pointed out as a risk factor of future depressive illness. However, in the present author’s view, one should revive the serious consideration of “dependency,” a focus of attention in early psychoanalytical studies, as a core feature of manic-depressive patients. The foregoing discussion reveals that dependency can be pointed out not only in depressive patients but also in manic patients, whose ego-boundary is blurred because they fail to respect “otherness” in others. Needless to say, the pathology of ego-boundary in manic-depressive patients mentioned above is of a completely different nature from the well-known disturbance of ego-boundary in schizophrenic patients.

The interpersonal insensitivity pointed out by Cohen and the interpersonal sensitivity mentioned by Akiskal are not contradictory. Manic-depressive patients lack interpersonal sensitivity because they have difficulties in perceiving and accepting others who are different from them. They are sensitive in interpersonal relations because they are anxious to remain attuned to others for fear that the true differences between others and themselves are revealed. What is prominent in the patients categorized in the “soft bipolar spectrum” is the coexistence of impulsive extroversion (Akiskal [24]), which is often driven by sexual libido. That libido is what motivates them to realize perfect attunement with others. However, sexual relations, in reality, reveal the profound differences between individuals. Therefore, their impulsive extroversion is usually accompanied by feelings of anxiety.

8. Analogy between “Shuuchaku” in terms of Time and “Shuuchaku” in terms of Space

I have so far discussed “shuuchaku” or the “sticking” of manic-depressive patients in terms of time and space independently. To conclude my reconsideration of the concept of the “shuuchaku temperament,” I would like to discuss the analogy between the two.

The past self of the patient, which adheres to the present self, is an unobtainable self. For instance, it is the self which should have realized complete achievements, which was perfectly one with its surroundings, and which could have chosen an ideal social role. However, it is the possibility to restore this self, however illusory, that drives the present self of the patients to continue its activities. In the same way, the “uchi” space with which patients are preoccupied is an unobtainable space, since it is an illusion that symbiotic relations are preserved in “uchi” space. However, the preoccupation with “uchi” space drives the patients to continue their activities in “soto” space.

These patients cannot afford to enjoy an untroubled life when they retreat from the present to the past and from “soto” space to “uchi” space. Such retreats bring the patients only the peace of the graveyard (Friedhofsruhe, Matussek [30, 31]), which also leads them to depression. Rather it is indispensable for the patients to be forever driven to continue their activities in “soto” space to maintain their mood. Thus, becoming free from the impositions in “soto” space (Entlastung) can also precipitate depression.

9. The Specificity of Japanese Culture and Evaluation of Manic-Depressive Patients in Japan

Finally, I must ask whether the foregoing discussions of the manic-depressive patients, especially those in terms of space, are valid only for Japanese patients or are also valid for non-Japanese.

Although the “uchi/soto” dichotomy may be more prominent in Japanese society than in other societies, I consider that the foregoing discussion is also valid, at least to some extent for non-Japanese patients. As a matter of fact, I referred to the descriptions by Cohen, Akiskal, and Schulte in the foregoing discussion and tried to show how these descriptions can be interpreted from the standpoint of “uchi/soto” dichotomy. I consider that what is specific is not the “uchi/soto” dichotomy itself but the tendency of Japanese culture to incorporate “soto” space into “uchi” space. Such a tendency shares something in common with the tendency of manic-depressive patients, as the foregoing discussions show. What does this tell us about the clinical view of manic-depressive patients in Japan?

I consider that this may be why manic-depressive personalities have not been considered to be highly pathological but have often been positively regarded in Japan. In the previous chapter I referred to Cohen’s patient who cannot verbalize his requests for others to meet his needs but conveys them only by implication. This kind of attitude can also be a burden to the people around him but may be more tolerated in Japanese society than in other societies, for it is a common standard of classical Japanese hospitality to anticipate others’ needs before they are verbalized and to offer help. Furthermore, the attitude of “shuuchaku personality” patients who sacrifice themselves by overwork in order to restore harmony in the working place is regarded as quite positive rather than a betrayal of workers’ rights in Japan.

It could be argued that Japanese people in general and manic-depressive patients in particular share the problem, that is, a tendency to direct themselves toward “soto” space without severing symbiotic bonds in their “uchi-” type relations. I consider that because of this similarity between the tendency of Japanese in general and that of manic-depressive patients in particular, Japanese psychiatrists have been able to provide a meaningful description of the positive aspects of the manic-depressive personality.

Of course, this is not to say that all Japanese are manic-depressives. Among ordinary Japanese the above-mentioned tendency is counterbalanced by at least two factors; one is the religion-based trait of Japanese to consider “shuuchaku” or preoccupation with worldly things in a negative light, as mentioned at the beginning of the present article. The other is the Japanese technique of human relations known as “ashirai.” The word “ashirai” was originally used to describe the performance of “noh” music, in which a flutist accompanying a singer performs without sharing any predetermined musical codes and rhythms. In human relations, “ashirai” is the technique to show high respect to the “otherness” of others and realize smooth human relations in “soto” space, without depending on rigidly codified rules or dialectic discussions. To avoid preoccupation or “shuuchaku” together with developing the technique of “ashirai” may be of therapeutic relevance for manic-depressive patients in Japan.

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Research Article

Ethnicity and Race Variations in Receipt of Surgery among Veterans with and without Depression

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To examine equity in one aspect of care provision in the Veterans Health Administration, this study analyzed factors associated with receipt of coronary artery bypass graft (CABG), vascular, hip/knee, or digestive system surgeries during FY2006–2009. A random sample of patients ($N = 317,072$) included 9% with depression, 17% African-American patients, 5% Hispanics, and 5% women. In the four-year followup, 18,334 patients (6%) experienced surgery: 3,109 hip/knee, 3,755 digestive, 1,899 CABG, and 11,330 vascular operations. Patients with preexisting depression were less likely to have surgery than nondepressed patients (4% versus 6%). In covariate-adjusted analyses, minority patients were slightly less likely to receive vascular operations compared to white patients (Hispanic OR = 0.88, $P < .01$; African-American OR = 0.93, $P < .01$) but more likely to undergo digestive system procedures. Some race-/ethnicity-related disparities of care for cardiovascular disease may persist for veterans using the VHA.

1. Introduction

Many studies have looked at the presence and effect of postoperative depression upon surgical recovery and other outcomes, but few have considered preoperative psychiatric status. A systematic review of the literature on postoperative clinical outcomes for patients with preexisting severe mental illness uncovered only 10 studies on patients with schizophrenia, two on patients with major depressive disorder, and none on patients with either bipolar disorder or posttraumatic stress disorder [1]. These four diagnoses comprise severe mental illnesses (SMI) affecting many aspects of life and health. The available reports suggested there may be worse outcomes for these patients including pulmonary thromboembolism and sepsis, potentially due to delayed presentation or management of acute disease [2, 3]. For depressed patients whose antidepressant medications are discontinued prior to surgery, worse postoperative depressive symptoms may ensue [4].

In addition, some reports have noted differences in the receipt of surgical interventions for ethnic minority patients [5–7] although others report no observable inequities, for example, in outcomes of colon cancer resection given equal access to care [8]. Equity in the provision of care is a primary goal of the Veterans Health Administration (VHA). The VHA treats a large, disadvantaged patient population selected from among US veterans of military service, including approximately 25–30% non-white veterans [9, 10], with uncertainty arising from missing data.

Major depressive disorder (MDD) is the most commonly occurring mental illness in the United States, affecting up to 17% of persons by age 54 per epidemiological studies [11, 12]. In a large integrated health care system such as the VHA, one out of 11 patients has an SMI, suggesting that patients undergoing invasive surgery will often have severe psychiatric comorbidity. In addition, the VHA treats 150,000 patients for MDD annually. The VHA's system for monitoring surgical outcomes, Veterans Administration National

Surgical Quality Improvement Program (VASQIP; formerly NSQIP), is a model of surgical quality improvement that has been adapted by the American College of Surgeons for use in nonfederal hospitals [13, 14]. Yet this comprehensive data collection and analysis program does not collect preoperative measures of psychiatric comorbidity, preventing its use to examine the question of parity in provision of surgery for patients with psychiatric disorders. In addition, the VASQIP sampling schema includes a cap on the number of procedures of any type assessed per month so that estimating prevalence of specific surgeries is not possible. The Surgical Treatment Outcomes of Patients with Psychiatric Disorders (STOPP) Project was funded by the VHA Health Services Research and Development program to address this methodological gap.

While VHA has made eliminating disparities in care a priority for some time [15], little work has been done in the area of surgical treatment. Data from VASQIP have provided evidence that African-American and Hispanic veterans were more likely to undergo amputation to treat peripheral artery disease, above the excess expected from higher rates of diabetes and hypertension in these groups [16]. Increased complications subsequent to knee (but not hip) surgeries have also been noted for African-American and Hispanic VHA patients compared to white patients [17].

Given the large number of veterans with psychiatric disorders, the complexity of managing cooccurring serious medical and mental disease, and the paucity of knowledge regarding surgery in patients with psychiatric disorders, the purpose of this paper was to examine race and ethnicity as factors potentially associated with surgeries experienced by patients with and without major depressive disorder.

2. Materials and Methods

The STOPP project assembled data from administrative extracts of the VHA's all-electronic medical records system for patients treated during the fiscal years 2005–2009 (fiscal year 2005 runs from October 1 2004 through September 30 2005). During this period, VHA treated approximately 7 million veterans, providing 78 million outpatient care visits and half a million inpatient stays per year nationwide. We identified procedures by CPT or ICD-9-A codes [18, 19]. Among surgeries, some of the most common were coronary artery bypass graft (CABG), vascular operations, hip and knee repairs and replacements, and surgeries on the digestive tract. Prior to the STOPP study, the research team conducted a 2-year pilot study (the POSSE project, also funded by VHA) to review and catalogue surgery procedure codes, selecting inpatient surgeries not performed solely for diagnostic purposes and categorizing all VHA patients treated in fiscal year 2005 as having SMI or not. This approach was then applied to VHA patients treated in FY2006–2009 for the STOPP project. For patients with more than one surgery date during 2006–2009, the first was selected and defined as the index surgery.

2.1. Sample. Patients were eligible for inclusion if they were receiving care in the VHA in fiscal year 2006. Inclusion criteria were US military veteran status per priority score, valid

race/ethnicity and gender data, valid date of birth, and logical mortality data (no record of a date of death prior to surgery date for the unique patient identifier). Because of the large number of patients treated each year (more than 5 million), a 10% random sample of those with nonmissing demographic data was taken. VHA outpatient data have high levels of missing data; patients with inpatient care or frequent visits are more likely to have valid race/ethnicity data [20]. Thus, patients included in the random sample were drawn from the 3.5 million patients with valid demographic measures. After identifying the cohort, we determined whether patients had any of the following nonambulatory surgeries during fiscal years 2006–2009: coronary artery bypass graft (CABG), vascular operations, hip or knee repairs and replacements, or surgeries on the digestive tract. Patients with other invasive surgeries as catalogued by the STOPP project were excluded for this report. The final sample size was 317,072. CABGs and vascular operations relate to disorders of the cardiovascular system, while the hip, knee, and digestive surgeries were selected as contrasting procedures. The codes defining our four selected surgery types are presented in Table 1.

2.2. Measures. The prior 12 months' data were used to determine depression status (depressed yes/no) and comorbidity burden at the time of surgery; for nonsurgery patients, fiscal year 2006 data were used. The Selim index of chronic physical conditions summed presence or absence of 30 comorbid conditions such as hypertension and irregular heartbeat based on diagnoses from the 12 month period [21]. The Selim was developed on patient self-reported conditions, validated against the Medical Outcomes Study Short Form Health Survey (SF-36), and later operationalized with VHA administrative data [22–24]. The Charlson comorbidity score summed 19 conditions weighted for their association with posthospitalization 1-year mortality. This measure was developed via chart review and later operationalized with ICD-9 codes from administrative data [25, 26]. Additional data aggregated from the inpatient and outpatient record extracts were age at surgery, gender, race (African-American, white, and other), and Hispanic ethnicity. Multiple records per patient were summarized to assign the most commonly reported race across multiple patient encounters, choosing self-report data over observer-reported values when available. Priority score ranges from 1 to 8 summarizing why a veteran is eligible for VHA care. Priority 1 veterans have 50–100% disability as a result of their military service and receive VHA care without copayments. Other categories include lower levels of service-connected disability, catastrophic disability (Priority 4), and low income (Priority 5). Priority is thus related to both socioeconomic status and severity of illness.

Diagnosis with major depressive disorder (MDD) was determined by receipt of outpatient care on two or more different dates in one year for MDD as indicated by ICD-9 diagnosis codes 296.2, 296.3, or 311. The reliability of VHA administrative databases has been ascertained by many health services studies examining demographic characteristics, types of care received, and diagnoses, noting missing data on race/ethnicity as a common problem [27–30].

TABLE 1: Definitions of four common types of surgery.

Surgery	Code schema	Values included
Coronary artery bypass graft (CABG)	CPT	33510, 33511, 33512, 33513, 33514, 33516, 33517, 33518, 33519, 33521, 33522, 33523, 33533, 33534, 33535, 33536, 92975, 92977, 92980, 92981, 92982, 92984, 92995
	ICD9A	3603, 3611, 3612, 3613, 3614, 3615, 3616, 3617, 3619, 363
Other vascular operations	CPT	33200, 33206, 33207, 33208, 33210, 33212, 33214, 33218, 33222, 33223, 33233, 33246, 33322, 33405, 33422, 34111, 34201, 34800, 34803, 34804, 34808, 34812, 34825, 34826, 35081, 35102, 35131, 35141, 35151, 35152, 35190, 35207, 35221, 35301, 35363, 35390, 35450, 35470, 35471, 35473, 35474, 35475, 35476, 35493, 35495, 35509, 35456, 35556, 35558, 35566, 35571, 35582, 35646, 35656, 35661, 35840, 35860, 35879, 35881, 36818, 36819, 36821, 37720, 37730, 37785, 37799
	ICD9A	00.50, 00.51, 00.56, 00.57, 00.58, 00.59, 00.60, 00.62, 00.66, 00.67, 00.68, 00.69, 35.0, 35.11, 35.12, 35.13, 35.14, 35.21, 35.22, 35.23, 35.24, 35.27, 35.28, 35.33, 35.39, 35.4, 35.50, 35.51, 35.53, 35.54, 35.55, 35.56, 35.57, 35.58, 35.59, 35.61, 35.62, 35.71, 35.72, 35.8, 35.91, 35.93, 35.95, 35.99, 36.01, 36.02, 36.04, 36.05, 36.06, 36.07, 36.09, 36.32, 36.39, 36.91, 36.99, 37.10, 37.11, 37.12, 37.13, 37.14, 37.15, 37.16, 37.17, 37.18, 37.19, 37.21, 37.22, 37.23, 37.24, 37.25, 37.26, 37.27, 37.28, 37.29, 37.31, 37.32, 37.33, 37.34, 37.4, 37.51, 37.61, 37.62, 37.64, 37.65, 37.80, 37.81, 37.82, 37.83, 37.94, 39.61, 39.99, 38.0, 38.1, 38.3, 38.40, 38.42, 38.43, 38.44, 38.45, 38.46, 38.47, 38.48, 38.49, 38.5, 38.6, 38.7, 38.8, 39.0, 39.1, 39.22, 39.23, 39.24, 39.27, 39.28, 39.29, 39.25, 39.26, 39.30, 39.31, 39.32, 39.41, 39.42, 39.43, 39.49, 39.50, 39.51, 39.52, 39.53, 39.55, 39.56, 39.57, 39.58, 39.59, 39.71, 39.72, 39.79, 39.8, 39.90, 39.91, 39.98
Hip/knee surgeries	CPT	27090, 27091, 27125, 27120, 27130, 27132, 27134, 27137, 27138, 27299, 27310, 27437, 27438, 27440, 27441, 27442, 27443, 27445, 27446, 27447, 27486, 27487, 27488, 29850, 29851, 29870, 29871, 29873, 29874, 29875, 29876, 29877, 29880, 29881, 29882, 29884, 29885, 29886, 29887, 29888
	ICD9A	77.66, 77.70, 77.76, 78.06, 78.16, 78.17, 78.46, 78.56, 79.26, 79.36, 80.05, 80.26, 80.46, 80.6, 80.76, 80.96, 81.47, 81.51, 81.52, 81.53, 81.54, 81.55
Digestive	CPT	42410, 42415, 43030, 43280, 43289, 43310, 43320, 43610, 43621, 43632, 43644, 43653, 43659, 43846, 44005, 44055, 44120, 44121, 44130, 44139, 44141, 44145, 44147, 44200, 44201, 44238, 44602, 44603, 44604, 44620, 44850, 45110, 45111, 45112, 45170, 46020, 46040, 47560, 47612, 48140, 48150, 48520, 49000, 49002, 49020, 49085, 49255, 49320, 49321, 49323, 49329
	ICD9A	42.0, 42.1, 42.19, 42.41, 42.42, 42.5, 42.6, 42.7, 42.81, 42.82, 42.83, 42.84, 42.85, 42.89, 42.91, 42.92, 42.99, 43.0, 43.5, 43.6, 43.7, 43.8, 43.9, 44.0, 44.21, 44.29, 44.40, 44.41, 44.42, 44.43, 44.44, 44.45, 44.46, 44.47, 44.48, 44.49, 44.5, 44.60, 44.61, 44.62, 44.63, 44.64, 44.65, 44.66, 44.67, 44.68, 44.69, 44.90, 44.91, 44.92, 44.93, 44.94, 44.95, 44.96, 44.97, 44.98, 44.99, 45.01, 45.02, 45.03, 45.10, 45.13, 45.15, 45.19, 45.26, 45.31, 45.41, 45.43, 45.49, 45.50, 45.51, 45.52, 45.61, 45.62, 45.63, 45.90, 45.91, 45.92, 45.93, 45.94, 45.95, 46.01, 46.02, 46.03, 46.1, 46.21, 46.22, 46.23, 46.24, 46.30, 46.31, 46.32, 46.33, 46.39, 46.40, 46.41, 46.42, 46.43, 46.44, 46.45, 46.46, 46.47, 46.48, 46.49, 46.51, 46.52, 46.6, 46.64, 46.71, 46.73, 46.74, 46.75, 46.76, 46.79, 46.81, 46.82, 46.85, 46.93, 46.94, 46.99, 47.93, 47.99, 48.0, 48.1, 48.4, 48.60, 48.66, 48.67, 48.68, 48.70, 48.71, 48.72, 48.73, 48.74, 48.75, 48.76, 48.77, 48.78, 48.79, 48.81, 48.82, 48.9, 48.93, 48.99, 51.00, 51.01, 51.02, 51.03, 51.04, 51.05, 51.06, 51.07, 51.08, 51.09, 51.10, 51.11, 51.12, 51.13, 51.14, 51.16, 51.17, 51.18, 51.19, 51.21, 51.32, 51.36, 51.37, 51.39, 51.40, 51.41, 51.42, 51.43, 51.44, 51.45, 51.46, 51.47, 51.48, 51.49, 51.51, 51.59, 51.60, 51.61, 51.62, 51.63, 51.64, 51.65, 51.66, 51.67, 51.68, 51.69, 51.7, 51.80, 51.81, 51.82, 51.83, 51.84, 51.85, 51.86, 51.87, 51.88, 51.89, 51.90, 51.91, 51.92, 51.93, 51.94, 51.95, 51.96, 51.98, 52.00, 52.01, 52.02, 52.03, 52.04, 52.05, 52.06, 52.07, 52.08, 52.09, 52.10, 52.12, 52.15, 52.16, 52.17, 52.18, 52.22, 52.11, 52.3, 52.4, 52.5, 52.6, 52.7, 52.8, 52.90, 52.91, 52.92, 52.93, 52.94, 52.95, 52.96, 52.97, 52.98, 52.99, 54.0, 54.1, 54.3, 54.4, 54.5, 54.6, 54.7

Diagnoses in administrative data are generally reliable when at least two dates of care list the same diagnosis [31–33].

2.3. Analysis. Patients were described by frequencies and means prior to modeling receipt of surgery as a function of clinical and demographic measures. Bivariate differences were assessed by chi-square analysis for categorical variables, by Student *t*-test for continuous measures when comparing two groups, and by analysis of variance for continuous measures by more than two groups (e.g., among the race categories). In the main models, multivariable logistic regression analyzed the relative odds of receiving a particular type of surgery as a function of race/ethnicity, age, gender, priority, depression status, and comorbidity burden (Selim Physical Comorbidity Index, Charlson Comorbidity Score). In exploratory models, we tested for an interaction between race or ethnicity and depression. An interaction asks whether the effect of one factor is changed when in the presence of another factor (has a synergistic or multiplicative relationship with the outcome). The types of surgery modeled as outcomes of the multivariable analyses were digestive system procedures, hip/knee procedures, CABG, and vascular operations. Results of the multivariable logistic regression models were reported as adjusted odds ratios (OR) with 95% confidence intervals. Odds ratios greater than 1.67 (i.e., a ratio of 4:3) or smaller than .75 (3:4) suggest a medium effect, and those greater than 2 (2:1) or smaller than 0.5 (1:2) denote a large effect [34]. The values between 1 and 0 (fractional values) represent “protective” effects or inverse associations, while values greater than 1 represent risk factors or positive associations with receipt of the specific surgery modeled.

3. Results

Among the 317,072 patients sampled, 18,334 had surgery (6%). Patients in the study sample averaged 63 years of age (SD 15, range 18–103) and included 5% women veterans, 5% Hispanic, and 17% African-American patients. Hispanic ethnicity was assessed independently of race; thus 4,380 individuals were identified as both Hispanic and African-American (1.4% of the sample). Most patients were qualified for VHA care via low income (35%; Priority 5), while 1 in 6 (17%) qualified with high levels of service-connected disability (Priority 1). Among the four types of surgeries studied, 3,755 patients had surgeries of the digestive system, 3,109 had hip/knee procedures, 1,899 received CABG, and 11,330 had vascular operations; some patients (1,759) had more than one of these surgeries. Patients diagnosed with major depressive disorder numbered 27,296 (9%) including 998 undergoing one of the four inpatient surgeries (see Table 2). The proportions of all patients in the sample, Hispanic patients, and African-American patients with each of the chronic conditions identified by the Selim algorithm are shown in Table 3.

Hispanic patients were about 4 years younger than non-Hispanic patients on average (58.3 versus 62.9 years, $t = 35.8$, $df = 18388$, $P < .001$), and African-American patients averaged 8 years younger than other patients (55.8 versus

64.1, $t = 121.9$, $df = 79415$, $P < .001$). Women, as might be expected from military recruitment patterns, were considerably younger than men by almost 15 years (48.7 versus 63.5 years, $t = 111.7$, $df = 17766$, $P < .001$). Patients with MDD were younger than their nondepressed counterparts (56.6 versus 63.3, $t = 78.0$, $df = 33953$, $P < .001$) and were less likely to undergo surgery than nondepressed patients (3.7% versus 6.0%, chi-square = 247.8, $df = 1$, $P < .001$). Hispanic patients were also somewhat less likely to have one of the four surgeries (5.2% versus 5.8%, chi-square = 10.1, $df = 1$, $P < .01$), but African-American race was not associated with a difference in frequency of these surgeries at the bivariate level (5.7% versus 5.8%, chi-square = 1.07, $df = 1$, $P = .30$ ns).

Turning to the multivariable models of the primary outcomes of interest (receipt of specific types of surgery), in adjusted analyses Hispanic patients were more likely to get digestive surgeries (Odds Ratio [OR] = 1.3; 95% Confidence Interval 1.1–1.4) and somewhat less likely to have vascular operations (OR = 0.88; 0.81–0.97) relative to non-Hispanic white patients; no association with Hispanic ethnicity was noted for hip/knee procedures or CABG (see Table 4). African-American patients were slightly more likely to have digestive surgeries (OR = 1.1; 1.1–1.2) but significantly less likely to have CABG (OR = 0.56; 0.49–0.65) or vascular operations (OR = .93; 0.88–0.98) relative to white patients; no association with African-American status was noted for hip/knee procedures.

In the exploratory models, no significant interactions between MDD and Hispanic ethnicity or between MDD and African-American race were observed. Thus, these factors had an additive but not multiplicative relationship to the outcome.

Depressed patients were significantly less likely to have digestive procedures (OR = 0.46; 0.40–0.54), hip/knee procedures (OR = 0.49; 0.42–0.57), CABG (OR = 0.40; 0.32–0.50), or vascular operations (OR = .47; 0.43–0.51). In addition to the race/ethnicity and depression effects, a gender effect was noted: women were more likely to have digestive procedures (OR = 1.3; 1.1–1.5) and less likely to undergo CABG (OR = 0.29; 0.20–0.43) or vascular operations (OR = 0.51; 0.44–0.58). Comorbidity had mixed association with receipt of the different types of surgery: both chronic conditions (per Selim) and those related to posthospital mortality (per Charlson) were positively associated with digestive system surgeries, but having a higher Charlson score (higher risk of post-hospital death) was associated with reduced likelihood of hip/knee procedures. More comorbid chronic conditions per Selim correlated with increased relative odds of hip/knee procedures.

4. Discussion

During the period 2006–2009, depression showed a pervasive dampening effect on the likelihood of having digestive, hip/knee, vascular, or CABG surgeries. Furthermore, Hispanic ethnicity and African-American race were inconsistently associated with decreased likelihood to get surgery in the VHA relative to non-Hispanic white patients. In fact, digestive surgeries were relatively more common among minority

TABLE 2: Characteristics of VHA patients (N = 317,072).

Characteristic	All patients		White patients		African-American patients		Hispanic patients	
	Mean	SD	Mean	SD	Mean	SD	Mean	SD
Age in FY2005 (range 18–103)	62.7	14.9	64.2	14.6	55.7	14.4	58.1	16.4
Selim index of chronic physical conditions (range 0–15)	2.4	1.9	2.4	1.9	2.2	1.9	2.1	1.8
Charlson comorbidity score (range 0–23)	1.1	1.6	1.1	1.6	1.1	1.8	1.1	1.7
	N	%	N	%	N	%	N	%
White	254,761	80.4					11,793	70.1
African-American	54,307	17.1					4,380	26.0
Females	16,821	5.3	11,793	4.6	4,380	8.1		
Women	16,375	5.2	11,093	4.4	4,778	8.8	842	5.0
Males	300,697	94.8	243,668	95.7	49,529	91.2	15,979	94.99
Priority 1—50–100% disability, service-connected	53,826	17.0	41,165	16.2	10,676	19.7	3,141	18.7
Priority 2—30–40% disability, service-connected	21,572	6.8	16,220	6.4	4,624	8.5	1,186	7.1
Priority 3—10–20% disability, service-connected	34,928	11.0	27,672	10.9	6,290	11.6	1,859	11.1
Priority 4—catastrophically disabled	13,472	4.3	9,872	3.9	3,329	6.1	869	5.2
Priority 5—low income	112,482	35.5	88,290	34.7	21,739	40.0	7,192	42.8
Priority 6—special military service groups	9,644	3.0	7,907	3.1	1,465	2.7	784	4.7
Priority 7 or 8—other veterans, with copayments	71,148	22.4	63,635	25.0	6,184	11.4	1,790	10.7
Major depressive disorder	27,296	8.6	21,682	8.5	4,936	9.1	1,693	10.1
Hypertension	181,765	57.3	146,634	57.6	30,880	56.9	8,616	51.2
Dyslipidemia	158,207	49.9	134,831	52.9	19,689	36.3	7,386	43.9
Digestive surgeries	3,755	1.2	2,866	1.1	733	1.4	239	1.4
Hip/Knee surgeries	3,109	1.0	2,392	0.9	554	1.0	132	0.8
Vascular operations	11,330	3.6	9,113	3.6	1,799	3.3	506	3.0
CABG (coronary artery bypass graft)	1,899	0.60	1,614	0.6	203	0.4	87	0.5

patients. At the same time, both coronary artery bypass graft and vascular operations were less common among minority veterans, even after controlling for mortality-associated comorbidity including several cardiovascular diagnoses, chronic conditions, age, gender, priority, and depression status. Given Hispanic and African-American patients somewhat younger age, some of this reduction in cardiovascular surgical care may be attributable to lack of need as both coronary and vascular diseases are age-related, although comorbidity (Selim, Charlson, and individual diagnoses) did not vary consistently across race/ethnicity groups; hypertension was as prevalent among African-American as white veterans for example (57%). While we present information on several potentially related comorbidities, the lack of information regarding severity of illness makes it difficult to determine whether or not diagnostic differences explain differences in surgery.

The much greater disparity in CABG for African-American veterans is more challenging to understand. A prospective study by Hannan and colleagues found that after controlling for appropriateness and necessity for CABG surgery, which accounts for disease severity, African-Americans were still significantly less likely to receive CABG. Because the clinician recommended CABG only 10% of the time when an African-American patient did not receive an “appropriate” CABG, it appears that neither patient refusal nor disease severity accounted for this disparity. Castellanos and colleagues have investigated access to high-quality surgeons for minority patients in California’s nonfederal (i.e., excluding VHA) hospitals, finding that on average Hispanic and African-American (as well as Asian) patients underwent CABG at the hands of surgeons with worse postoperative mortality ratings [35]. Possibly there is greater reluctance to risk surgery given publicity about findings of this nature.

TABLE 3: Distribution of selim chronic comorbid conditions for major minority race and ethnicity groups.

	White patients (<i>N</i> = 254,761)	Hispanic veterans (<i>n</i> = 16,794)	African-American veterans (<i>n</i> = 54,118)
Hypertension	57.2%	51.2%	56.8%
Diabetes	24.6%	29.6%	25.3%
Irregular heartbeat	9.8%	5.0%	5.1%
Peripheral vascular disease	5.2%	4.1%	3.9%
Heart attack	2.6%	2.0%	1.5%
Angina pectoris	1.9%	2.3%	1.4%
Transient ischemic attacks	1.2%	0.8%	0.7%
Stroke	3.6%	3.6%	4.2%
Congestive heart failure	5.4%	3.5%	4.4%
Chronic obstructive pulmonary disorder	14.7%	8.5%	10.0%
Hepatitis	3.4%	5.9%	7.9%
Anemia	7.4%	7.4%	10.1%
Cancer	11.4%	8.6%	9.5%
Skin cancer	2.5%	0.8%	0.2%
Diverticulitis	3.3%	3.3%	2.1%
Inflammatory bowel disease	0.7%	0.4%	0.3%
Gall bladder disease	0.9%	1.3%	0.8%
Gout	3.5%	2.2%	4.3%
Peptic ulcer	1.3%	1.5%	1.4%
Rheumatoid arthritis	1.1%	0.7%	0.7%
Osteoarthritis	17.4%	14.5%	16.3%
Hip arthropathies	1.4%	1.1%	1.4%
Other arthropathies	4.5%	4.0%	5.1%
Low-back pain	17.9%	20.6%	20.6%
Cataracts	12.6%	12.4%	11.1%
Seizures	0.4%	0.5%	0.6%
Thyroid disorder	7.2%	6.1%	3.6%
Urinary tract infection	2.9%	3.8%	4.0%
Enlarged prostate	12.2%	9.8%	7.9%
Prostatitis	0.8%	1.0%	0.9%

Exposure to California surgeons with worse ratings was most likely an issue of access to care, an issue which is reduced in the federal VHA. Previous research indicates that disparities within the VHA appear to be related to processes that involve either patient-provider communication issues or more effort on the part of patients/providers such as surgery and invasive procedures [15]. Nonmedical options, particularly prayer, seem to have greater value among African-Americans than among their white counterparts for managing conditions such as arthritis [36–38]. Similarly, African-American VA patients with bipolar disorder have demonstrated a greater willingness to use CAM as well [39].

Cram and colleagues reported lower rates of revascularization (percutaneous coronary intervention (PCI) or CABG) among African-American patients relative to white or Hispanic patients after adjusting for demographics, comorbidity, and insurance status but were unable to explain the residual differential [40]. A few years earlier, Becker

and Rahimi documented excess in-hospital mortality risk for African-American or female CABG patients [41]. Our findings accord with the Cram and Becker studies, also finding a difference particular to African-American patients rather than Hispanic patients.

Presurgical major depressive disorder was uniformly associated with reduced likelihood of surgery, and this association showed a large effect (more than two-fold). Furthermore, the effect of depression was independent of race and ethnicity; thus, depression and African-American race would have an additive but not synergistic effect, each factor diminishing the depressed African-American patients' relative odds of CABG. Patients with MDD may be less likely to follow preoperative self-management guidelines, may choose nonsurgical therapies, or may be considered poor risks for surgery given the known association of postoperative depression with poor healing. For example, Doering and colleagues noted a positive association between depressive

TABLE 4: Odds ratios associated with race and ethnicity indicators for patients undergoing surgery in the VHA ($N = 317,072$).

Effect	Dependent variable	
	Odds ratio	95% confidence interval
<i>Digestive surgery</i>		
Depressed*	0.46	0.40–0.54
Hispanic*	1.26	1.10–1.43
African-American*	1.14	1.05–1.24
Age	1.00	1.00–1.00
Female*	1.30	1.12–1.52
Priority 1 (no copay)*	1.24	1.15–1.35
Selim physical comorbidity*	1.25	1.22–1.27
Charlson comorbidity score*	1.18	1.16–1.20
<i>Hip/Knee Surgery</i>		
Depressed*	0.49	0.42–0.57
Hispanic	0.84	0.71–1.00
African-American	1.04	0.95–1.15
Age*	0.99	0.99–0.99
Female	1.00	0.85–1.18
Priority 1 (no copay)*	1.77	1.63–1.91
Selim physical comorbidity*	1.65	1.62–1.69
Charlson comorbidity score*	0.68	0.66–0.70
<i>CABG</i>		
Depressed*	0.40	0.32–0.50
Hispanic	0.91	0.74–1.13
African-American*	0.56	0.49–0.65
Age*	0.98	0.98–0.99
Female*	0.29	0.20–0.43
Priority 1 (no copay)	1.06	0.94–1.19
Selim physical comorbidity*	1.44	1.40–1.48
Charlson comorbidity score	0.97	0.94–1.00
<i>Vascular operations</i>		
Depressed*	0.47	0.43–0.51
Hispanic*	0.88	0.81–0.97
African-American*	0.93	0.88–0.98
Age	0.99	0.99–1.00
Female*	0.51	0.44–0.58
Priority 1 (no copay)*	1.16	1.10–1.22
Selim physical comorbidity*	1.42	1.40–1.43
Charlson comorbidity score*	1.09	1.08–1.10

* 95% confidence level excludes 1.0.

symptoms and objective evidence of impaired wound healing [42]. Alternatively, patients with major depression may have more negative views of surgery, as an extension of the hopelessness that characterizes depression [43]. In addition, some research has noted diminished benefit from CABG accruing to patients with postoperative depressive symptoms [44]; thus providers may believe that patients with depression are better off waiting for an improved mental status prior to revascularization surgery. Examining long-term outcomes could be helpful to illuminate the relative benefits of alleviating depression prior to revascularization weighed against the potential benefits of earlier revascularization.

Because of historical recruitment trends in the armed services, women in the VHA are younger than men as well as underrepresented. Thus, there is a recognized interaction between gender and age. Due to the small numbers of women undergoing surgery, it was not possible to model this interaction explicitly, but it most likely accounts for the majority of the gender effect.

The sample studied in this paper was taken from VHA patients with valid data on race/ethnicity in administrative extracts from the VHA electronic medical records system. The sample was mostly male due to military recruitment patterns. Patients who visited the VHA less often or used

only outpatient care were more likely to have missing data on race/ethnicity [20]. Thus, the study sample was biased toward sicker patients. Results may not generalize to healthier patient samples or women. Generally speaking, VHA patients are sicker than US residents [45, 46] and may more closely resemble Medicaid patients than patients with access to private insurance.

5. Conclusions

Our findings demonstrated some disparity with regard to race/ethnicity largely consistent with previous research. Moreover, our study demonstrated a strong effect of preoperative depression with depressed individuals being far less likely to receive these types of surgical procedures. In addition to exploring the combined influence of multiple vulnerabilities, such as chronic mental illness and ethnicity, with its accompanying potential disparities of care, future research examining variation in outcomes of surgery in preoperatively depressed patients is needed to determine the impact of this apparent disparity.

Conflict of Interests

No author has identified a conflict of interests regarding the study, beyond working for and receiving grant support from the institution studied (Veterans Health Administration).

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