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Profiles of Personal Coping Resources, Social Coping Resources, and Health Behaviors among Latinos: Implications for Depressive Symptoms and Self-Rated General Health

Author

Gutierrez, Angela

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Profiles of Personal Coping Resources, Social Coping Resources, and Health Behaviors among Latinos: Implications for Depressive Symptoms and Self-Rated General Health

A dissertation submitted in partial satisfaction of the requirements for the degree Doctoral of Philosophy in Community Health Sciences

by

Ángela Gutiérrez

2020

ABSTRACT OF THE DISSSERTATION

Profiles of Personal Coping Resources, Social Coping Resources, and Health Behaviors among Latinos: Implications for Depressive Symptoms and Self-Rated General Health

by

Ángela Gutiérrez

Doctor of Philosophy in Community Health Sciences

University of California, Los Angeles, 2020

Professor Courtney Thomas Tobin, Chair

Epidemiological research demonstrates a "Latino health paradox": Despite greater exposure to social stressors and socioeconomic disadvantage, Latinos experience similar or lower rates of several serious health issues (e.g., low infant birth weight, mortality) relative to non-Hispanic Whites. Nevertheless, Latinos fare worse on other indicators of health problems, such as depressive symptoms and self-rated health. To identify the source of these disparities, population health research has focused on the social, health, and stress-related risk factors associated with poor health outcomes among Latinos. While studies have highlighted the various social determinants that shape health outcomes among Latinos, they also underscore the significance of coping as a way to mitigate the negative impact of these risks. As such, coping is critical for chronic disease management, and identifying the ways that Latinos draw on coping resources to deal with the social and health challenges they face may be just as important as identifying risk factors that contribute to poor health. However, several gaps in the coping

research among Latinos limit our understanding of how this population manages their health despite adversity. To better promote positive coping and maximize health among Latinos, it is critical to understand the types of personal, social, and behavioral coping tools Latinos use to respond to health and stress-related hardships. The purpose of this dissertation is to understand the modifiable factors that improve quality of life among Latinos. I employed latent class analysis (LCA) to identify profiles of personal, social, and behavioral coping resources among Latinos. I then explored the social determinants that shape the development of these profiles. Finally, using multivariate linear regression, I assessed mental and global health outcomes across each coping profile. Applying LCA to coping research captures the complex range of coping and enriches our theoretical understanding of the underpinnings of the latent coping construct. Findings suggest important nuances in psychosocial coping resources among Latinos, such that having greater access to a variety of resources may be most protective for health. For instance, those with fewer personal and social resources tend to have poorer mental health. Moreover, findings underscore the ways that coping and overall well-being are shaped by social conditions (e.g., country of birth, age, social disadvantage). This work bridges disease self-management and stress process research by identifying multidimensional coping profiles and providing a more comprehensive approach in understanding psychosocial and health behavior mechanisms among middle-aged and older Latinos.

The dissertation of Ángela Gutiérrez is approved.

Steven P. Wallace

Dawn M. Upchurch

Christina A. Christie

Courtney Thomas Tobin, Committee Chair

University of California, Los Angeles

2020

Para mi familia. Para mi comunidad.

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CURRICULUM VITAE

Ángela Gutiérrez

2015	California State University, Fullerton	Master of Public Health Concentration: Health Promotion and Disease Prevention
2012	University of California, Irvine	Bachelor of Arts (Dual Major: Public Health Policy; Sociology)

Subfields and Areas of Interest

Chronic Disease Management; Aging; Risk and Resiliency; Psychosocial Resources and Coping; Mental Health; Physical Health; Allostatic Load; Mixed-Methods Research; Community-Based and Culturally-Informed Research; Evaluation of Health Promotion Interventions; Promotoras; Promotora-researchers

Peer-reviewed Journal Articles

Bravo, R. L. & **Gutierrez, A.** & De Trinidad Young, M. (2017). Two steps forward, one step back: Dancing toward equitable collaboration. *Narrative Inquiry in Bioethics*, 7(1), 4-7. doi:10.1353/nib.2017.0002

Jones, C. J., Rakovski, C., Rutledge, D. N., & **Gutiérrez, A.** (2015). Fitness performance of women with fibromyalgia compared to criterion standards: A pilot study. *Journal of Aging and Physical Activity,* 23(1), 103-111. doi: 10.1123/japa.2013-0159.y

Gutiérrez, A. (2014). The Affordable Care Act: National gains of the initial enrollment period and drawbacks among California State University students and their families. Editorial. *California Journal of Health Promotion,* 12(*3*), vi-iv

Selected Published Reports

Maccalla, N., **Gutierrez, A.,** Zhong, S., & Wallace, S.P. Defining Well-represented and Underrepresented Groups in the Diversity Program Consortium's Enhance Diversity Evaluation of Post-secondary Student Outcomes. *Diversity Program Consortium*, November 2019.

Gutierrez, A., Guerrero, L., McCreath, H. M., & Wallace, S.P. NRMN Online Portal Registrants Report High Levels of Mentoring Experience and Quality – October 2018. *Diversity Program Consortium,* November 2018. https://www.diversityprogramconsortium.org/briefs/pages/

Wallace, S.P., Kietzman, K., Padilla-Frausto, I., **Gutierrez, A.** Universal Assessment Tool Focus Group Report. *UCLA Center for Health Policy Research* and *UCLA Borum Center for Gerontological Research,* June 2016.

Gutiérrez, A. (2014, March 19). Time to get covered, California. *The Orange County Register,* p. X2

Selected Conference Presentations

Gutiérrez, A. & Thomas Tobin, C. (2019, November). Profiles of Personal Coping Resources and Physical and Mental Health Outcomes among Latinx Older Adults. Results presented as a poster presentation at the American Public Health Association Annual Meeting, Philadelphia, PA.
***Outstanding Student Paper Nominee, Latino Caucus**

Marquez, G., Bravo, R.L., Chavez, M.E., Duenas, M., Garcia, A., **Gutierrez, A.**, Ramirez, S., Rico, S., and De Trinidad Young, M.E., (2019, November). A promotora-led study to understand promotoras' experiences conducting Latino health promotion. Results presented as an oral presentation at the American Public Health Association Annual Meeting, Philadelphia, PA.

Gutiérrez, A. & Thomas Tobin, C. (2019, September). Profiles of Social Coping Resources: Implications for Depressive Symptoms among Latino/a/x Older Adults. Results presented as a poster presentation at the International Conference on Aging in the Americas and Instituto Nacional de Geriatría Bridging Conference, Mexico City, Mexico.
***2019 ICAA Honorable Mention award**

Gutiérrez, A. (2017, November). Exploring academic researchers' perceptions on promotora-academic partnerships. Results presented as a poster presentation at the 145th American Public Health Association Annual Meeting, Atlanta, GA.

Gutiérrez, A., Espinoza, L., Rutledge, D.N., & Jones, C.J. (2015, November). Examination of a chronic disease self-management curriculum and self-efficacy among Latino adults. Results presented as a poster presentation at the 143th American Public Health Association Annual Meeting, Chicago, IL.

Gutiérrez, A., Espinoza, L., Rutledge, D.N., & Jones, C.J. (2014, November). Chronic disease self-management and health status: Coping strategies among Spanish-speaking Latino adults. Results presented as a poster presentation at the 8th Annual National Conference on Health Disparities, Long Beach, CA.

Gutiérrez, A., Espinoza, L., Rutledge, D., & Jones, J. (2014, June). Quantitatively measuring the effectiveness of a chronic disease self-management program among Latino adults. Results presented as a poster presentation at the 2014 Pathways to Cures: Clinical Translational Research Day, Irvine, CA.

Jones, J., Rutledge, D., Rakovski, C., & **Gutiérrez, A**. (2013, August). Fitness of women with fibromyalgia compared to criterion-referenced standards associated with functional independence. Results presented as a poster presentation at the 2013 MYOPAIN Congress, Seattle, WA.

CHAPTER 1
INTRODUCTION

Latinos comprise the largest minority group in the U.S.[1] Among Latinos living in the United States, the proportion of older Latinos is expected to increase from 8% in 2016 to 21% by 2060.[2] A major public health challenge for this aging population is chronic disease management. Relative to other non-Hispanic Whites, Latinos fare worse on various physical and mental health problems. Moreover, Latinos experience a high rate of comorbidities and lower mental health service use, which further exacerbates health problems.[3–5] These disparities in health become more critical throughout the life course, given that many racial and ethnic differences in health are evident by mid-life.[6] Patterns in depressive symptoms and self-rated health may provide insight into the overall quality of life, well-being, and management of chronic diseases and stressors among Latinos. For instance, relative to Whites and Blacks, Latinos report lower levels of self-rated health and these disparities worsen over the life course.[7] Also, Latinos in the U.S. suffer from a high burden of depressive symptoms as a result of the various stressors (e.g. discrimination, acculturation) and challenges (e.g. socioeconomic disadvantage, comorbidities) they face. Assessing depressive symptoms and self-rated health may provide insight into issues of global health and psychological distress, which ultimately shape Latinos' overall quality of life, well-being, and the management of the chronic diseases and social challenges. Thus, understanding the ways that this population deals with the social and health issues they face may be just as important as identifying the risk factors that contribute to their heightened health risk. Moreover, given the growing size of the aging Latino population in the U.S., it is both a public health and economic imperative to better maintain the physical functioning and mental well-being among this group.[8,9] Therefore, to maintain or improve overall quality of life among this

population, additional research is needed to identify ways to mitigate the negative impact of the health-related and stress-related challenges that many Latinos face.

Risk Factors for Poor Self-Rated Health and Depressive Symptoms among Latinos

Population health studies have largely focused on the various social, health, and stress-related risk factors associated with poor mental and physical health outcomes among Latinos.[10–13] There is a well-established link between diverse forms of social stressors (e.g. discrimination, chronic stress) and poor health outcomes among Latinos.[14–16] Furthermore, preexisting physical health conditions (e.g. disability, pain) have been recognized as risk factors that diminish individuals' overall well-being and undermine their ability engage in health promoting behaviors. For instance, disability and pain are risk factors for depression among older Latinos, while pain is a risk factor for poor self-rated health.[17–19] While studies have highlighted the various social determinants that shape mental and physical health outcomes among Latinos, they raise several questions regarding ways to mitigate the negative impact that these risk factors have on well-being. To better promote positive coping among Latinos facing contextual, health-related, and stress-related challenges, it is critical to understand the types of personal, social, and behavioral coping tools individuals use to respond to these hardships.

Coping with Social, Health, and Stress-related Hardships

Another large body of literature has demonstrated the positive role of coping in chronic disease management. Over the past few decades, there have been a number of definitions and theoretical approaches to understanding coping.[20–23] In general, coping can be defined as a "cognitive and/or behavioral attempt to manage (reduce or tolerate) situations that are appraised as stressful to an individual".[24] The coping process has been well-documented in prior research, which has examined the stages (e.g. proactive coping, resource accumulation, appraisal) that take place prior to coping.[20,22,23,25] However, coping research among Latinos has largely focused on

specific coping styles, such as how individuals respond to recent diagnoses, manage specific health conditions (e.g. chronic pain),[26,27] depression,[11,28,29] arthritis[3] or utilize religious/spirituality-based coping strategies.[21,30–32] This literature has brought to light the various and complex ways Latinos respond to various stress-related and health-related hardships, such as drawing on religion, engaging in different coping styles, and learning from the experience of health shocks. However, there are several gaps regarding the underlying mechanisms of coping with stressors and physical health problems among this population. First, most of the Latino-specific coping literature focuses on coping styles or the broader process of coping with diverse environmental pressures.[4,18,27,33] This research fails to highlight the variations in coping resources available to Latinos and does not consider the ways that coping resources are socially patterned among this group.[34] Secondly, among studies that examines coping resources among Latinos, most often focus on one coping resource at a time, and only a few studies have examined the influence of multiple resources.[35] For instance, one study examined the multiple mediating roles of active coping and self-efficacy in the relationship between acculturative stress and depression.[36] Findings highlight how coping resources work in combination to shape depression among Latinos. Yet, this narrow scope of research has largely overlooked the resources that Latinos draw on to cope with the diverse social, health, and stress-related hardships. As such, there is a need to assess coping resources in a way that captures the use of multiple resources and identifies how these patterns in resources shape well-being. A third limitation of the coping resources literature among Latinos is that this body of work has examined the role of coping resources on a single health outcome at a time, which raises the issue of misclassification. Though a large proportion of the coping resources literature among Latinos has examined depression, stress, and self-rated health as health outcomes,[11,34,36] the

majority of studies only examine one health outcome at a time. In the cases where multiple health outcomes were examined in the same study, both health outcomes capture either physical or mental health outcomes exclusively.[37] As such, investigating how multiple types (personal, social, health behavior) of coping resources shape overall well-being is needed to disentangle the broader coping process among Latinos.

Purpose of the Dissertation

The overall goal of this dissertation is to clarify the attributes and resources that Latinos draw on to cope with various hardships (e.g. physical health problems, stressors) and to understand the health implications of these personal attributes, coping resources, and coping tendencies. This dissertation aims to identify profiles of coping resources among Latinos, determine the factors that shape the development of these coping resource profiles, and assess how these coping resource profiles are associated with well-being. The overall goal of this dissertation is to enhance the knowledge-based on how to promote positive coping as Latinos face social, health, and stress-related barriers throughout the life course. This dissertation will examine personal resources, social resources, and health behaviors to capture diverse types of coping resources, in an effort to disentangle the role of particular coping resource patterns for Latinos' overall well-being. To better promote positive coping among Latinos facing contextual, health, and stress-related hardships, it is critical to understand the types of personal, social, and behavioral tools individuals use to respond to these hardships. Understanding these coping resource profiles will allow public health practitioners to identify under-resourced individuals to services that can increase their ability to successfully manage health conditions and diverse stressors they face across the life course.

CHAPTER 2
BACKGROUND AND CONCEPTUAL FRAMEWORK

Health Patterns among Latinos

The United States is a racialized society with a system of racial stratification that gives rise to environmental risk factors, which subsequently contribute to health disparities across racial and ethnic groups.[38–40] Consequently, racial and ethnic minorities, such as Latinos, face many unique challenges and risk factors that impact their well-being across the life course. To capture the health impacts of these risk factors among Latinos, it is important to assess multiple indicators of health and well-being. Using multiple indicators of health can reduce the risk of overestimating or underestimating the impact of social and health challenges on overall well-being. Moreover, assessing well-being using multiple indicators, can yield insight into the overall well-being of Latinos and not just insight on a particular disorder.[41]

Misclassification bias refers to biases in the causal effects between social arrangements and mental health consequences. Misclassification bias arises from the application of a disorder-specific model to the overall mental health consequences of various social arrangements, such as racism and the stratification of health. The consequences (e.g. depression, anxiety) of these diverse social problems are not limited to a single disorder.[41] Consequently, examining the relationship between social arrangements and a single disorder can lead to overestimations of who is "well" by misclassifying individuals who have other disorders as "well". This can ultimately produce underestimates of the significance of these social risk factors in shaping health outcomes.[42,43] To minimize classification bias, a broader range of health outcomes must be simultaneously analyzed.[41] Reducing misclassification bias is particularly salient when examining the impact of social (e.g. stress) and health (e.g. disability, pain) challenges on overall health and well-being. For instance, only capturing one disorder as the health outcome can lead

to overestimating the health and well-being of Latinos living with and managing stress and health-related challenges. Capturing a more global dimension of health, in addition to depression, yields unique insight on the unique ways stress, physical health problems, and coping resources differentially shape distinct indicators of health and well-being.

Therefore, this dissertation will examine two indicators of health: depressive symptoms and self-rated general health. As will be described in the following section, prior research has highlighted the significance of both of these health outcomes. Assessing both depressive symptoms and perceived health status aims to capture health more holistically to gain insight into Latinos' overall well-being.

Depressive Symptoms among Latinos

Latinos living in the United States experience a high prevalence of depression.[44] Findings from the population-based Hispanic Community Health Study/Study of Latinos highlight that although the within-group variance of high depressive symptoms varies from 22% – 38%, depending on Latino subgroup, 27% of all participants across all Latino subgroups reported high depressive symptomatology.[45] Moreover, the prevalence of depression has negative implications for quality of life, morbidity (e.g. psychiatric problems), and mortality. For instance, 80% of adults with moderate to severe depression report experiencing difficulty with social, work, and home activities because of their depression.[46] Depression has also been associated with numerous adverse outcomes to physical health, such as higher risk of heart disease, stroke, and all-cause mortality.[44,47–49] Untreated or mistreated depression is associated with suicidal and homicidal ideations.[50] Prior research has demonstrated that the prevalence of depression is under-diagnosed and undertreated among racial and ethnic minorities and economically disadvantaged populations.[45] Therefore, this dissertation study will assess depressive symptoms among Latinos. Assessing depressive symptoms may provide insight into issues of psychological

distress, may be telling of how Latinos are managing day-to-day, and may ultimately provide insight into the mental health of Latinos who are facing various stress-related and health-related challenges.

Self-rated Health among Latinos

Self-rated health, a measure of global health, has been a strong predictor of health care utilization, morbidity, and mortality[51] and is often used to capture racial and ethnic disparities in health.[52] Racial and ethnic disparities in self-rated health are well documented, such that racial minorities fare worse than non-Hispanic Whites.[53] Although some subgroups of Latinos experience health outcomes equal to or better than those of non-Hispanic Whites, self-rated health is not an outcome that falls under this Latino advantage or epidemiological paradox.[54,55] Assessing patterns in global health measures, such as self-rated health, may provide insight into the global ways stress exposure and health problems shape Latinos' overall quality of life and the management of the diseases and social challenges they face. A large proportion of aging Latinos suffer from a comorbidities or diverse forms of stressors. As such, capturing a global measure of health can be telling of the ways these diverse risk factors are broadly shaping their overall quality of life.

Theoretical Framework

Numerous theoretical approaches have been used to examine coping and the implications of coping on health among Latinos. This dissertation draws on the life course perspective and the stress process model to examine the attributes and resources that Latinos draw on to cope with the various challenges (health conditions, stressors) they face and to assess the health implications of these patterns in coping resources.

The Life Course Perspective

The life course perspective is a useful framework in examining health patterns among older Latinos. The life course perspective examines phenomena at the intersection of social pathways,

social change, and developmental trajectories; it is one of the preeminent theoretical orientations in the study of lives.[56–58] The life course perspective emphasizes historical time and place and social perspectives across generations, cohorts, or individuals' lifespans to identify patterns of disease in the context of the social, economic, and cultural environment; it emphasizes all ages and stages in life and the intergenerational context in which they exist.[59] As such, the life course perspective is a useful framework for examining social pathways and the ways in which social pathways, linked lives, and human agency shape the risk factors and health outcomes Latinos experience.

The life course perspective is not without limitations. The life course perspective draws on diverse disciplines and has been used for examining the patterns of disease in the context of the social, economic, cultural, and historical environments and in the context of timing, duration, and accumulation of exposures.[56] Although the life course perspective takes on a macro-level perspective to emphasize the interplay between human agency and context and to emphasize that social pathways are trajectories that individuals and groups in society follow, the life course perspective is a broad framework and does not specify the individuals' roles and specific pathways. By drawing on the stress process model, we can more comprehensively examine health trajectories across the life course that explicitly identify the risks and the roles of resources in shaping health outcomes. This would more specifically consider individuals' agency as it impacts responses and risks to particular phenomena. Assessing patterns in individual attributes or resources can yield information on how individuals draw on distinct coping resources (e.g. personal, social, health behaviors) in the face of stress-related and health-related hardships. The incorporation of personal, social, and behavioral resources draws on the life course in the recognition that coping resources are socially patterned and develop from ones

lived experiences and social status. The stress process model works in concert with the life course perspective to identify the underlying mechanisms, such as coping resources, that shape the impact stress and physical health status have on depressive symptoms and self-rated general health.

The Stress Process Model

The United States is a racialized society and racial stratification in the United States has negative implications for the health, education, social trajectories, and the overall life course of racial and ethnic minorities.[38–40] Some minority groups, such as Latinos, living in the United States hold a lower social position than do non-Hispanic Whites.[43,60,61] Social structures get under the skin and leave biological imprints through various forms, such as discriminatory experiences and lower social position.[62,63] Although Latinos fare poorly, relative to Whites, on some health outcomes, Latinos' health is better than expected for other health indicators, such as infant mortality.[61,64,65] This phenomenon has been coined the epidemiological paradox.[66–68]

Theories of race and ethnicity are critical in providing a theoretical orientation of the distal and proximal mechanisms that explain the persistent health disparities that are produced and reproduced in society.[69] Psychosocial stress models have shown great promise in understanding racial and ethnic disparities in health and in examining inquiries related to coping processes.[43,70–72] The stress process model has also been widely linked with the life course perspective, highlighting their compatibility for a number of diverse research inquiries and health outcomes, such as allostatic load.[73–76] Consequently, the stress process model has been identified as a natural ally to the life course perspective.[77]

Given that the stress process model has been the dominant perspective of researchers who aim to identify potentially modifiable psychosocial factors influencing health[43] and has been widely used to assess racial and ethnic health disparities.[43,78,79] This dissertation draws on the

stress process model and life course perspective to examine the associations between social characteristics, diverse risk factors for poor health (e.g. stress exposure, comorbidities), patterns across distinct coping resources (personal resources, social resources, and health behaviors), and well-being.

Coping Research among Latinos

A large body of literature has focused on understanding the mechanisms (e.g. coping, acculturation, culture) that shape Latinos' health outcomes, despite the various stress- and health-related hardships they face.[61,68,80] Coping is a key pathway between the risk factors Latinos face and their health outcomes; it is a mechanism that can mitigate the negative impact of various challenges (e.g. stressors, physical health problems) on overall well-being.[35,81] Coping is defined as deliberate, conscious, action-oriented and intrapsychic efforts to control, adapt, and manage the demands created by stressful events.[23,82,83] Coping can be influenced by a variety of factors across the life course.[82,84,85] Furthermore, coping has gained widespread attention for its significant role on stress-related physical and mental outcomes and for its intervention potential.[23]

There are several types of personal coping styles, such as emotion-focused coping, problem-focused coping, adaptive coping, and high effort coping.[86–89] Coping strategies have previously been dichotomized into two broad categories: adaptive coping (active coping, planning, positive reframing, humor, religion, and support) and maladaptive coping (self-distraction, denial, venting, substance use, behavioral disengagement, and acceptance).[85] The coping literature has highlighted that the process of coping and coping strategies varies by context (e.g. nativity, race and ethnicity, chronic health condition). For instance, cultural influences impact pain expression and pain management, such that Latinos report hesitation in

taking medication for pain and report lower levels of pain expression, relative to non-Hispanic Whites.[27,90]

Coping Resources

Throughout the life course, coping resources aid in the process of coping by reducing negative impacts of stressful life events.[23,25] Coping resources are relatively stable individual differences or attributes, such as mastery, self-esteem, mattering, and social support.[23,91] Coping resources such as social support, mastery, and self-esteem, have also been referred to as psychosocial resources, due to their role in enhancing mental health.[92] Coping resources are shaped by contemporary and developmental conditions of life.[91,93] Prior research indicates socially advantaged groups tend to have more positive mental health-enhancing resources than disadvantaged groups.[94,95] Racial and ethnic minorities have fewer resources, such as lower levels of mastery and smaller social networks, accessible to them.[34]

Furthermore, coping resources shape the coping process by serving as means for confronting or avoiding the stressor(s).[23] Coping resources, such as personal resources or attributes, can partly define individuals' capabilities to cope with stressors.[91] Coping resources, such as mastery, have been linked with buffering the negative impact of stress exposure and promoting mental well-being.[78,96,97]

The stress process model distinguishes personal resources from and social resources. Personal resources consist of personal attributes, such as mastery, emotional reliance, self-esteem, mattering, and John Henryism.[43] Personal resources can partially mediate the relationship between social characteristics and health, and personal resources can partially moderate and mediate the relationship between stress exposure and health.

In addition to personal resources, social resources also aid in the coping process. Social resources refer to the quality and extent of individuals' social relations.[98] For instance, social

support is a commonly studied social resource, particularly because individuals' coping processes are shaped by the relationships they have with others (e.g. family, friends, medical providers). Although the stress process model explicitly details personal resources and social resources, the role of health behaviors in the coping process has become increasingly recognized.[77,99] A growing body of literature has examined how individual forms of social resources and health behaviors shape health outcomes.[36,100]

Gaps in Understanding Coping Resources among Latinos

There are several gaps related to coping patterns among Latinos and their implications for well-being. First, most of the Latino-specific coping literature focuses on coping styles or the broader process of coping with diverse environmental pressures.[4,18,27,33] Only a limited—albeit growing—body of research has explored the resources Latinos draw on to cope with stress and health-related problems. Consequently, the resources Latinos use to persevere and manage the stress-related and health-related problems they face are not well understood. Moreover, underexploring coping resource patterns among Latinos fails to highlight the variance in coping resources available to Latinos and to describe the ways that coping resources are socially patterned.[34] This limitation reduces the risk of identifying under-resourced groups—groups who should be targeted for health promotion efforts.

Secondly, among the Latino-specific coping resources literature, these studies most often focus on one coping resource at a time. The majority of prior research has examined the relationship between a coping resource and a single health outcome, while potentially examining the roles of mediators or moderators for the focal relationships. For instance, prior research has examined the role of spirituality in the relationship between coping and resiliency.[35] For the most part, prior research has not yet been able to compare the simultaneous influence of multiple resources on health outcomes.[36] Only few studies have explored the role of multiple resources on

health outcomes. For instance, a cross-sectional study among 235 older Latinos examined the moderating effects of two types of social support (instrumental and emotional) in the relationship between linguistic acculturation and service.[101] Another study examined the simultaneous role of two coping resources by assessing the multiple mediating roles of active coping and self-efficacy in the relationship between acculturative stress and depression.[36] As such, the body of work that has evaluated the influence of multiple resources is limited. This narrow scope of research has largely overlooked the patterns in coping resources Latinos draw on to cope with the diverse challenges they face. As such, there is a need to assess coping resources in a way that captures the use of multiple resources and, subsequently, to identify how these resource patterns shape well-being. Consequently, it is of theoretical and practical significance to use methodological approaches that allow for the measurement of various coping resources to reveal distinct patterns in coping resources. Latent class analysis—a methodology that identifies subgroups of individuals with similar patterns—would reveal latent classes or profiles of individuals who employ similar patterns of responses on the observed coping resource variables.[102]

Given the broad array of coping resources (e.g. personal, social, and behavioral resources) individuals may utilize in the face of stress and health-related hardships, it is of both theoretical and practical significance to identify social patterns or subgroups based on similarities in coping resources. A person-centered approach to coping resource profiles would allow for the documentation of meaningful subgroups of individuals with similar coping resource profiles. This exploratory process would reveal coping resource profiles, to subsequently relate the profiles to well-being. A large body of literature has documented the high prevalence of physical and mental health issues among Latinos, however, less is known about the tools Latinos use to cope and/or thrive despite the adversity and lower social status they face.[61] Better understanding

the coping resources patterns among Latinos can work to better allocate resources, assessments, and tailored intervention efforts, particularly among under-resourced groups.

Latent class analysis is a modeling technique that identifies latent—or unobservable—subgroups within a population; it identifies homogenous groups within a diverse population.[103] As such, employing latent class analysis in the present study would reveal latent classes—also known as typologies or profiles—of individuals who employ similar patterns of responses on the observed coping resource variables. Applying latent class analysis to identify latent classes of coping resources may provide insights into the health risks that people face. Latent class analysis is mathematically similar to factor analysis, and it goes beyond adding up the average level or amount of resources. Instead, latent class analysis qualitatively identifies coping resource subgroups. Factor analysis is a variable-focused approach that groups variables who have a uniting underlying dimension, whereas latent class analysis is a person-centered approach that groups individuals who have similar underlying characteristics.[24,103]

Latent class analysis is a useful tool for this study in that it can move the coping literature beyond developing taxonomies or classifications of variables and move the coping literature towards identifying classes or typologies of individuals who employ similar coping approaches. Understanding these coping resource patterns will allow public health practitioners to identify under-resourced groups and refer them to various health promotion efforts. Without a strong understanding of the distribution of coping resources among this population, the factors that shape coping resource profiles and the ways in which coping resource profiles shape well-being remain unclear.

Third, the coping resources literature among Latinos has examined the role of coping resources on a single health outcome (e.g. depression, self-rated health status) at a time, which

raises the issue of misclassification. A large proportion of the coping resources literature among Latinos has examined depression, stress, and self-rated health as health outcomes.[11,34,36] However, the majority of research examines one health outcome at a time. In the cases that multiple health outcomes have been examined in the same study, both health outcomes capture either physical or mental health outcomes exclusively.[37] It is vital to capture multiple indicators of health to minimize issues related to misclassification, which can ultimately lead to overestimations of who is classified as "well" or not.[42,43]

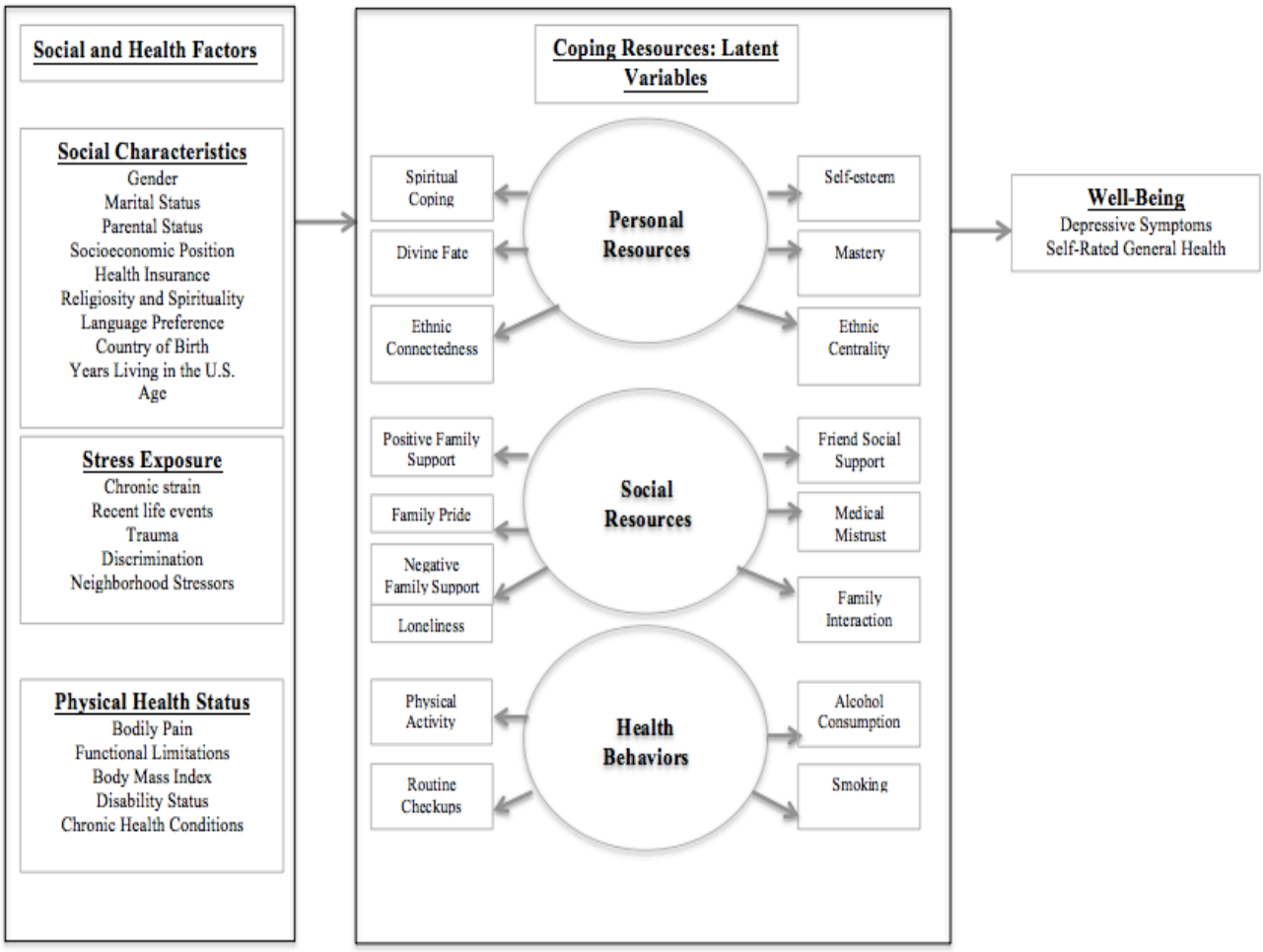
The Integrated Conceptual Model

To address these limitations, there is a need to integrate the stress process model within the life course perspective. The integrated theoretical framework can draw on aspects of the life course perspective and the stress process model to reach the overall project goal, which is to two-fold. The overall project goals are: (a) to identify coping patterns among Latinos and (b) to assess the implications for well-being associated with these distinct coping patterns. The life course perspective examines phenomena at the intersection of social pathways, social change, and developmental trajectories.[56–58] The stress process model emphasizes the ways in which social characteristics impact stress exposure, which in turn impact health and well-being—all while recognizing the role of individuals' resources.[60] This dissertation study draws on the elements of the life course perspective and stress process model that may be particularly useful for identifying coping resource patterns among Latinos and their implications for well-being (see Figure 2.1).

The integrated conceptual model applies the ideas of linked lives, life span development, agency, and social pathways from the life course perspective and integrates them with the ideas of social characteristics, stress exposure, and resources from the stress process model. The

following section describes the integrated conceptual model, its constructs, and how the constructs are linked with one another.

Figure 2.1 Profiles of Personal Resources, Social Resources, and Health Behaviors: Implications for Depressive Symptoms and Self-Rated General Health



Central Components and Interrelations of the Integrated Model

Health Outcomes. Indicators of both global health (self-rated general health) and mental health (depressive symptoms) will be assessed in order to reduce misclassification bias. The issue of misclassification can arise as coping resources may differentially affect global and mental health outcomes. [43] Consequently, it is important to assess how these diverse patterns in coping resources, in combination, shape global and mental health outcomes.

Stress Exposure. Grounded in the previous literature that has documented the relationship between diverse forms of stress exposure and adverse health outcomes, a multidimensional approach in capturing stress exposure is depicted in the conceptual model. Chronic stressors are enduring and often include peoples' institutional roles, such as marriage, parenthood, employment, and finances.[60] Those who experience enduring and repeated stressors are more likely to experience more health problems than those who experience non-enduring hardships and stressors.[104] A large body of literature has linked diverse forms of stress exposure (e.g. chronic stress, discrimination, trauma) and adverse health outcomes among Latinos.[12,105,106] Five dimensions of stress exposure are depicted: chronic strain, recent life events, trauma, daily discrimination, major discrimination, and fear of crime. Each will be described individually for the descriptive and bivariate analyses.

Physical Health Status. As highlighted earlier, preexisting physical health conditions (e.g. disability, pain) have been linked as risk factors that affect individuals' overall well-being. The link between indicators of poor physical health status and (a) depressive symptoms and (b) self-rated health outcomes has been well documented. For instance, physical limitations, pain, and pain level have been linked with higher depressive symptomatology.[107] Among community-dwelling older adults, pain is a significant predictor of poor self-rated health status.[19] Similarly, a strong relationship between physical disability and risk for psychiatric disorders has been established, such that elevations in risk are greater among Latinos, relative to Blacks and non-Hispanic Whites.[108] As such, physical health problems contribute to diminished well-being and are, thus, risk factors for individuals' overall well-being. In the conceptual model, the broad category of physical health status is comprised of bodily pain, functional limitations, and comorbidity.

Personal Resources. Drawing on the stress process model to recognize the role of personal resources in shaping health outcomes, this study assesses three domains of personal resources: spiritual coping, ethnic identity, and personal control. These three domains of personal resources are operationalized using the following six variables: spiritual coping, divine fate, ethnic centrality, ethnic connectedness, self-esteem, and mastery.

Social Resources and Linked Lives. Drawing on the life course perspective's principle of linked lives and the stress process model's construct of social resources, this dissertation examines how the following seven social resources are socially distributed among Latinos: positive family support, family pride, family interactions, friend social support, negative family support, medical mistrust, and loneliness. A large body of literature has shown that social relationships can buffer illness,[109–113] but the patterns in social resources that people draw on to cope is unclear.

Health Behaviors. Health behaviors can work to promote health (e.g. physical activity) or undermine health (e.g. smoking). When facing stressors, individuals engage in behaviors to reduce the stress and feelings of distress. Over time, consistently engaging in maladaptive behaviors can undermine well-being and exacerbate health problems. As such, health behaviors are part of the coping process. Prior research has documented the role of behavioral resources in shaping or mitigating the role of environmental strains on health outcomes.[36] As such, four health behaviors are included in the conceptual model.

Social Characteristics. In the integrated conceptual model, social characteristics consist of gender, marital status, parental status, SES, medical insurance status, religious attendance and affiliation, language preference, nativity, years in the U.S., and age group. Social characteristics conceptually function as antecedents to the relationship between (a) social and health

characteristics (e.g. social status, stress exposure and physical health status) and (b) well-being. For the purpose of this study, social characteristics are considered as antecedents and treated as covariates in the statistical modeling. For example, differences in spiritual coping have been reported between U.S-born individuals and those born in Mexico.[65] Consequently, nativity is depicted as a covariate. Furthermore, historical change may distinguish the lives of successive birth cohorts.[56] The life course perspective recognizes the ways in which people engage in coping may vary by age group. A large body of literature has identified differences in age groups and cohorts on several health phenomena.[114] As such, age group is treated as a covariate. For each dissertation study, covariates included in the regression model are theoretically and statistically driven. Details are provided in the analytic strategy of each dissertation study.

Social Pathways and Human Agency. A main goal of this model is to evaluate the components (social and health risk factors, coping resources, well-being) of the model, with a goal of focusing on the patterns in social pathways and human agency. The principle of human agency refers to the interplay between individual choices, social influence, and structural constrains. The choices and actions individuals engage in are taken with opportunities and constraints of social and historical circumstance.[56] The interplay of choices and actions, as constrained by context, have important consequences for future trajectories. Individuals' choices are constrained by context (e.g. social institutions, culture).[56] Coping resources are shaped by contemporary and developmental conditions of life.[93,108] In the conceptual model, personal resources, social resources, and health behaviors represent individuals' human agency in the coping process. However, this dissertation applies latent class analysis to observe how human agency and social conditions coalesce to produce patterns in psychosocial resources and health behaviors.

Social pathways are the family, education, employment, and residence trajectories that individuals follow. Social pathways are formed from the interplay of agency and structure, such that individuals' choices are constrained by context (e.g. social institutions, culture).[56] The concept of social pathways informs a focus on individual and social patterns in coping resources. The concept of social pathways is applied in the conceptual model through the interplay of constructs emphasizing personal agency (coping resources) and context (the distribution of social stressors and health problems that impact well-being).

Dissertation AIMS

Based on the existing literature, the present theoretical gaps in understanding coping resources and health among Latinos, and the overall project goal of this dissertation, below are the three aims for each of the three dissertation studies:

Study 1: Profiles of Personal Coping Resources among Latinos: Implications for Depressive Symptoms and Self-Rated General Health

AIM 1: Identify profiles of coping based on patterns across personal resources (divine fate, spirituality, ethnic connectedness, ethnic centrality, mastery, self-esteem) among Latinos

AIM 2: Determine the social and physical health correlates associated with personal resource profiles

AIM 3: Assess self-rated general health and depressive symptoms across personal resource profiles

Study 2: Profiles of Social Coping Resources among Latinos: Implications for Depressive Symptoms and Self-Rated General Health

AIM 1: Identify profiles of coping based on patterns across social resources (positive family support, family pride, family interactions, friend social support, negative family support, medical mistrust, and loneliness) among Latinos

AIM 2: Determine the social and physical health correlates of the distinct social resources profiles

AIM 3: Assess self-rated general health and depressive symptoms across social resource typologies

Study 3: Profiles of Health Behaviors among Latinos: Implications for Depressive Symptoms and Self-Rated General Health

AIM 1: Identify profiles of health behavior resources (physical activity, routine checkups, smoking, and alcohol consumption) among Latinos

AIM 2: Determine the social and physical health correlates of the distinct health behaviors profiles

AIM 3: Assess self-rated general health and depressive symptoms across health behavior profile

CHAPTER 3
STUDY 1: PROFILES OF PERSONAL COPING RESOURCES AMONG LATINOS: IMPLICATIONS FOR DEPRESSIVE SYMPTOMS AND SELF-RATED GENERAL HEALTH

Introduction

Latinos comprise the largest minority group in the U.S.[1] Among all Latinos in the United States, the percent of older Latinos—ages 65 and older—is expected to increase from 8% in 2016 to 21% by 2060.[2] This aging population also faces an array of challenges in managing health conditions, challenges such as a high rate of comorbidities, underutilization of mental health service use, and medical mistrust, which further exacerbate health problems.[3–5] Relative to non-Hispanic Whites, Latinos also fare poorly on some indicators of health and well-being, such as depression[115] and self-rated health.[7] As such, a major public health challenge for this aging population is chronic disease management. Understanding the ways that this population draws on psychosocial resources, such as personal coping resources, to deal with the social and health issues they face may be just as important as identifying the risk factors that contribute to their poor health outcomes. This study draws on the life course framework and stress process model to examine the role of personal coping resources (e.g. spirituality, ethnic identity, mastery, and self-esteem), as tools to promote positive coping and optimize well-being throughout the life course.

The purpose of this study is to identify the personal coping resources that Latinos draw on to cope with the various health and stress-related challenges they face and to understand the health implications of these personal coping patterns. The aims of this study are three-fold: (1) identify profiles of personal coping resources (divine fate, spirituality, connectedness, centrality, mastery, self-esteem) among Latinos; (2) determine the social and physical health correlates associated with personal resource profiles; and (3) evaluate differences in self-rated general

health and depressive symptoms across personal resource profiles. To better promote positive coping among Latinos facing contextual, health, and stress-related hardships, it is critical to understand the types of personal coping tools individuals use to respond to these hardships. Understanding these coping resource profiles will allow public health practitioners to identify under-resourced individuals and enhance linkages to services that can help them better manage the hardships they face.

Background

Epidemiological research demonstrates a "Latino health paradox."[67,116] Despite greater exposure to social stressors and socioeconomic disadvantage, Latinos experience similar or lower rates of serious health issues (e.g. low infant birth weight) and mortality than non-Hispanic Whites.[55,117] Nevertheless, compared to other racial/ethnic groups, Latinos fare worse on other indicators of physical and mental health problems, such as depressive symptoms and self-rated health. Untreated depression and poor perceived self-rated health are associated with suicidal and homicidal ideations and premature mortality.[50] Latinos also face a higher rate of comorbidities and lower mental health service use, which further exacerbate health problems.[3–5] For instance, national estimates suggest Latinos living in the United States experience significantly higher depression chronicity than non-Hispanic Whites[115] and 80% of adults with moderate to severe depression report experiencing difficulty with social, work, and home activities because of their depression.[46] Depression has also been associated with numerous adverse outcomes to physical health, such as higher risk of heart disease, stroke, and all-cause mortality.[44,47–49] Self-rated general health similarly does not follow the Latino advantage or epidemiological paradox. Relative to Whites and Blacks, Latinos report poorer perceived general health and these disparities worsen over the life course.[7] Thus, assessing patterns in depressive symptoms and

self-rated health may more holistically capture health and quality of life among Latinos, shedding light on how this population manages the various chronic conditions and stressors they face.

Population health studies have largely focused on the various social, health, and stress-related risk factors associated with poor mental and physical health outcomes among Latinos.[10–13] Diverse forms of social stressors (e.g. discrimination, chronic stress) contribute to poor health outcomes among Latinos.[14–16] Furthermore, preexisting physical health conditions (e.g. disability, pain) have been recognized as risk factors that diminish individuals' overall well-being and undermine their ability engage in health promoting behaviors. For instance, disability and pain are risk factors for depression among older Latinos, and pain is a risk factor for poor perceived general health.[17–19] While studies have highlighted the various social determinants that shape mental and physical health outcomes among Latinos, they also raise several questions regarding ways to mitigate the negative impact of these risks. For instance, studies demonstrate the significance of personal coping resources, such as mastery, emotional reliance, and self-esteem, as tools used to cope with stressors and other life challenges.[12,29,118] However, research on personal coping resources that can buffer life stresses and those generated by chronic conditions remains limited among Latinos.

The life course framework and stress process model can serve as guiding frameworks in bringing attention to the role of personal coping resources as tools that individuals draw on when coping with the various challenges they face throughout the life course. A life course perspective emphasizes phenomena at the intersection of social pathways, social change, and developmental trajectories.[56–58] The stress process model incorporates the central concepts of stressors, coping, and physical and mental health outcomes.[79,119] The principles of each theoretical orientation have

been comprehensively described elsewhere.[43,78,79,120,121] This study integrates the stress process model within the life course framework and applies these theoretical orientations to identify (a) profiles of personal coping resources that Latinos draw on to cope with the various stress and health challenges they face and (b) the health implications of these personal resource patterns. The stress process model highlights the role of personal coping resources as underlying mechanisms that shape the impact that stress and physical health (co)morbidities have on depressive symptoms and self-rated general health. This study applies several life course principles: the principle of *social pathways* to recognize that coping resources are socially patterned; *linked lives* to consider the multidimensionality of managing chronic health issues and diverse stressors and to recognize that coping with these complex risk factors entails the use of multiple forms of coping approaches; and *human agency* to recognize that individuals have the agency to cope in unique ways and these distinct coping styles may modify the broader coping process. Ultimately, integrating the life course framework and stress process model allows us to identify ways that Latinos develop key coping resources and to evaluate their linkages with mental and physical health outcomes.

Coping among Latinos

A large body of literature has focused on understanding the mechanisms (e.g. coping, acculturation, culture) that shape Latinos' health outcomes.[61,68,80] Coping is defined as deliberate, conscious, action-oriented and intrapsychic efforts to control, adapt, and manage the demands created by stressful events; coping is a key pathway between the risk factors Latinos face and their health outcomes.[23,82,83] Thus, it is a mechanism that can mitigate the negative impact of various challenges (e.g. stressors, physical health problems) on overall well-being.[35,81]

Coping resources, also referred to as psychosocial resources, are relatively stable, individual-level characteristics that develop over time and within the context of one's experiences and social interactions.[23,60,91,122] In the stress process model, coping resources are distinguished as personal coping resources and social resources[60]. Personal coping resources are personal attributes, such as mastery, emotional reliance, self-esteem, and John Henryism[43], whereas social resources include various dimensions of social support.[60] Coping resources are shaped by contemporary and developmental conditions of life[91,93], such that socially advantaged groups tend to have more positive mental health-enhancing resources.[94,95] Racial and ethnic minorities have been found to have fewer resources, such as lower levels of mastery and smaller social networks, accessible to them.[34]

Coping resources aid in the process of coping by reducing the negative impact of stressful life events[23,25] and by serving as means for confronting or avoiding the stressor(s).[23] This paper will focus on the distribution and role of personal coping resources, as prior research suggests personal coping resources can partly define individuals' capabilities to cope with stressors.[91] For instance, prior research suggests mastery buffers the negative impact of stress exposure and promotes mental well-being.[78,96,97] As such, personal coping resources can partially mediate the relationship between social characteristics and health, and personal coping resources can partially moderate and mediate the relationship between stress exposure and health.

A large body of literature has examined coping among Latinos. However, several gaps among this population remain. First, most of the Latino-specific coping literature focuses on coping styles or the broader process of coping with diverse environmental pressures.[4,18,27,33] For instance, coping research among Latinos has largely focused on specific coping styles by examining patterns in how individuals respond to recent diagnoses, manage specific health

conditions, such as chronic pain[26,27], depression[11,28,29], and arthritis[3], or how individuals utilize religious/spirituality-based coping strategies.[21,30–32] Consequently, variations in coping resources available to or used among Latinos are underexplored, which limits our understanding of the ways that coping resources are socially patterned among this group.[34]

Second, among studies that examine coping resources among Latinos, most focus on one coping resource at a time, and only a few studies have examined the influence of multiple resources.[35] For instance, one study examined the multiple mediating roles of active coping and self-efficacy in the relationship between acculturative stress and depression.[36] Nevertheless, there is a need to assess coping resources in a way that captures the use of multiple resources and identifies how these patterns in resources shape health. A third limitation of the coping resources literature among Latinos is that this body of work has examined the role of coping resources on a single health outcome at a time, which raises the issue of misclassification. Misclassification bias refers to biases in the causal effects between social arrangements and mental health consequences.[41] For instance, only capturing one disorder as the health outcome can lead to overestimating the health and well-being of Latinos living with and managing stress and health-related challenges. Capturing a more global dimension of health, in addition to depressive symptoms, provides insight on the unique ways stress, physical health problems, and coping resources differentially shape distinct indicators of health and well-being. Though a large proportion of the coping resources literature among Latinos has examined depression, stress, and perceived general health as health outcomes,[11,34,36] the majority of studies only examine one health outcome at a time. In the cases where multiple health outcomes were examined in the same study, both health outcomes capture either physical or mental health outcomes exclusively.[37] As such, investigating how multiple types of personal coping resources (e.g.

spiritual coping, ethnic identity, mastery, and self-esteem) shape physical and mental health outcomes is needed to disentangle the broader coping process among Latinos.

Methods

Study Design and Sample

Data are from a community-based study of community-dwelling Miami-Dade County residents. All interviews were administered in English or Spanish. The "Disabilities" dataset includes extensive measures on personal coping resources, social resources, health behaviors, and psychosocial factors among a sample of racially and ethnically diverse male and female adults in the Miami-Dade area. Wave 1 interviews were conducted between 2000 to 2001 (n = 2,000), where 1,000 individuals were screened as having activity limitations and 1,000 were matched on age, gender, and race-ethnicity with no activity limitations.[108] Wave 2 interviews were conducted between 2003 to 2004 (n = 1,600). Wave 2 was comprised of a representative subsample of 1,600 Wave 1 participants. In Wave 2, 800 participants were screened for disability status and 800 counterparts with no disability. All interviewers were computer assisted and administered in the participants' preferred language (English or Spanish).[108] Interviewers obtained informed consent prior to beginning each interview. Additional details on the Disabilities dataset have been described elsewhere.[108]

The sample is representative of the Miami-Dade County population. Participants were sampled so as to achieve equal representation (25% each) of Cuban, Other Latino, Black, and non-Hispanic White racial and ethnic groups.[108] As described above, participants were oversampled to have an equal distribution of individuals with and without activity limitations and with and without a physical disability. The focus of the study was on physical limitations, so individuals were excluded from the study if their limitations arose from social, psychological, or

cognitive causes (e.g. mental retardation); from Alzheimer's disease or dementia; or visual, auditory, or speaking impairments.[108] To understand patterns of coping among Latinos, data for this study are restricted to Latinos only (n = 629). The composition of Latino subgroups, as determined by country of birth, was primarily Cuban (50.8%), followed by American (9.5%), Colombian (9.5%), Nicaraguan (5.1%), Puerto Rican (5.1%), Dominican Republican (3.3%), Guatemalan (1.1%), Salvadorian (1.0%), and Mexican (1.0%). About 14.3% of the sample was born in a Latin American country outside of those listed here.

Measures

Health Outcomes

Depressive Symptoms. Depression symptomatology was measured using the 20-item Center for Epidemiologic Studies Depression (CES-D) scale ($\alpha = 0.881$), which asks participants about depressed mood, feelings of guilt, sleep disturbance, appetite loss, and feelings of guilt and worthlessness in the last month.[123] Response options were (0) Not at all, (1) Occasionally, (2) Frequently, and (3) Almost all the time. Positive items were reverse coded. The possible range of scores is 0 - 60, with higher scores indicating a higher presence of depressive symptomatology.

Self-rated General Health. Self-rated general health was measured using a four-item scale from the RAND 36-Item Health Survey, General Health Subscale.[124,125] Participants were asked (a) "You seem to get sick a little easier than other people (reverse coded); (b) "You are as healthy as anybody you know"; (c) "You expect your health to get worse (reverse coded)"; and (d) "In general, your health is excellent". [51] Response options were (0) Definitely true, (1) Mostly true, (2) Don't know, (3) Mostly false, and (4) Definitely false. Scores were summed and averaged, so that higher scores indicate poorer self-perceived general health. The possible range of scores is 0 – 4.

Personal Coping Resources

Spiritual Coping. Spiritual coping was assessed using a single item that asked, "How often do you turn to religion or your spiritual beliefs to help you deal with your daily problems?" Response options were (0) Never, (1) Rarely, (2) Sometimes, (3) Often, and (4) Always. For the purpose of the LCA, all personal coping resources responses were recoded into dichotomous variables. Spiritual coping was recoded as (1) No (Never and Rarely), (2) Yes (Sometimes, Often, and Always).

Divine Fate. Divine fate was measured using seven items ($\alpha = 0.757$) that included statements, such as "God has a reason for everything that happens to me" and "God has a specific plan for my life." Response options ranged from (0) Strongly disagree to (3) Strongly agree. Items were summed so that higher scores indicate higher levels of divine fate. For the purpose of the LCA, the row mean was obtained for the divine fate variable and two response categories (1 = Low, 2 = High) were generated based on the 50^{th} percentile.

Ethnic Identity. Ethnic identification consists of individuals' sense of belonging to a particular ethnic group and the extent to which that individual affirms membership in that group.[126] Ethnic identity was measured using a 10-item scale shortened and modified version of Phinney's Multigroup Ethnic Identity Measure to assess ethnic identity.[126,127] Respondents were asked to respond to the degree to which they agreed with ten statements related to their ethnic identity. The items were on a likert scale that ranged from zero (strongly disagree) to six (strongly agree). A factor analysis was conducted to identify latent dimensions of ethnic identity. Factor loadings identified two dimensions of ethnic identity: connectedness and centrality.

Connectedness. Six items represent the latent construct of connectedness ($\alpha = 0.844$). These items are the following: "Most of your close friends are from your own ethnic group,"

"You are more comfortable in social situations where others are present from your ethnic group," "Your ethnic group had a lot to do with who you are today," "Your ethnic background plays a big part in how you interact with others," "You prefer to date people from your ethnic group," and "Your values, attitudes, and behaviors are shared by most members of your ethnic group."

Centrality. Four items represent the latent construct of centrality ($\alpha = 0.757$). These items are the following: "You have a strong sense of yourself as a member of your ethnic group," "You identify with other people from your ethnic group," "Your ethnic heritage is important in your life," and "You are proud of your ethnic heritage." For both connectedness and centrality, items were summed so that higher scores indicate higher levels of the construct. For the purpose of the LCA, the row mean was obtained for the connectedness and centrality scales, respectively, and two response categories (1 = Low, 2 = High) were generated based on the 50th percentile. The ethnic identity items focused on Hispanic/Latino heritage only. Consequently, only participants who identified as Latino/Hispanic were asked questions related to their Latino ethnic identification. The ethnic identity items had a large proportion of missing values (n = 68, 10.8%). Excluding the subgroup of participants who did not respond to these items may bias the sample. As such, a third category ("Missing") was created for those who did not respond to the ethnic identity items. In health-related studies, observing ten percent missing data on race and ethnicity-related questions is common.[128] The observing 11% of missing data on these items may be due to usual rates of opting out on race and ethnicity items. Another reason may be due to regional factors related to identity or acculturation. Approximately 10% of our sample of Latinos were born in the U.S., which may affect they decided to respond to ethnic identity questions. Although all participants identified as Latino, these 68 participants may have declined to elaborate on the questions related to their ethnic heritage.

Mastery. Mastery was assessed using a seven-item established scale ($\alpha = 0.757$).[97] Participants were asked to identify the degree to which they agreed or disagreed to statements, such as "You have little control over the things that happen to you" and "You often feel helpless in dealing with your problems of life." Response options were (0) Strongly agree, (1) Mildly agree, (2) Neither agree nor disagree (3) Mildly disagree, and (4) Strongly disagree. Positive items were reverse coded. Items were summed so that higher scores indicate higher levels of mastery. The possible range of scores is 0 - 28. For the purpose of the LCA, the row mean was obtained for the mastery variable and two response categories (1 = Low, 2 = High) were generated based on the 50th percentile.

Self-esteem. Self-esteem was measured using a six-item ($\alpha = 0.813$) subset of Rosenberg's (1979) measure.[71,129] Participants were asked to respond with the degree to which they agreed or disagreed to statements, such as "You feel that you have a number of good qualities" and "On the whole, you are satisfied with yourself." Response options were (0) Strongly disagree, (1) Mildly disagree, (2) Neither agree nor disagree (3) Mildly agree, and (4) Strongly agree. One negative item (All in all, you are inclined to feel that you are a failure) was reverse-coded. The possible range of scores is 0 - 24, with higher scores indicating a higher presence of self-esteem. For the purpose of the LCA, the row mean was obtained for the self-esteem variable and two response categories (1 = Low, 2 = High) were generated based on the 50th percentile.

Stress Exposure

Stress exposure was assessed using six domains that take place across the life course: chronic stress, recent life events, major life events (trauma), daily discrimination, major discrimination, and neighborhood stress.

Chronic Stress. Chronic stress was measured using Wheaton's (1994) scale.[130] The scale was modified to better capture stressors middle-aged and older adults are likely to face.[71] Chronic stress was assessed using 36 items relating to general experiences, (un)employment, relationships, and general strain. Example items include, "You're trying to take on too many things at once" and "There is too much pressure put on you to be like other people." Respondents were asked the extent to which each item is true. Responses were coded as (0) Not true, (1) Somewhat true, and (2) Very true. Responses to all variables were summed, with the possible range of scores being 0 - 72, with higher scores indicating a higher presence of chronic stress.

Recent life events. Recent life events were measured with a 32-item index that asked respondents if they had experienced a range of serious accidents, deaths, or financial crises in the past 12 months.[71] Example items include, "Did someone have a major financial crisis?" and "Was there a serious accident or injury?" Responses to all 32 dichotomous (0 = No, 1 = Yes) items were summed, with the possible range of scores being 0 - 32.

Trauma. Trauma was assessed using 44 items that asked respondents whether they had experienced major life events—or trauma in one's lifetime (0 = No, 1 = Yes). Examples items include, "Did either of your parents drink or use drugs so often or so regularly that it caused problems for the family," and "Did your father or mother not have a job for a long time when they wanted to be working?" Response options were summed, with the possible range of scores being 0 - 44.

Major and Everyday Discrimination. Major discrimination and daily discrimination were assessed using the Major Discrimination Scale.[131] Major discrimination was assessed using seven items. Respondents were asked if they had ever faced events related to employment, education, or housing (0 = No, 1 = Yes). Example items include, "Have you ever been unfairly

treated by the police (e.g. stopped, searched, questioned, physically threatened, or abused)?" and "For unfair reasons, has a landlord or a relator ever refused to sell or rent you or your family a house or apartment?" The possible range of scores was zero to seven. Everyday or daily discrimination was measured using nine items ($\alpha = 0.864$) that include statements, such as "You receive worse service than other people at restaurants or stores" and "You are treated with less courtesy than other people." Response categories were (0) Never, (1) Rarely, (2) Sometimes, (3) Often, and (4) Almost always. Response options were summed, with the possible range of scores being 0 - 36.

Neighborhood Stressors. Neighborhood stressors was measured using 10 items related to the extent respondents were concerned about becoming a victim of crime. Example statements included, "Having someone break into your house and take your personal belongings while you are away." Response categories were (0) Not at all afraid, (1) Mildly afraid, (2) Moderately afraid, and (3) Very afraid. The possible range of scores is 0 - 30, with higher scores indicating higher levels of fear of neighborhood crime.

Total Stress. To assess total stress, each stress dimension was standardized using z-scores and summed. Scores below zero indicate below average stress exposure while scores above zero indicate higher than average stress exposure. The range was –3.80 to 18.29.

Physical Health Status

Pain. Participants who indicated that they experienced pain were asked about the frequency and intensity of pain experienced. Those who responded as not having bodily pain were not asked questions about pain intensity or pain frequency and received "No pain" and "Never," respectively, as responses.

Pain Intensity. Pain intensity was assessed using a single item that asked, "On average, how bad has your bodily pain been during the past four weeks?" Responses were (0) No pain, (1) Mild pain, (2) Moderate pain, and (3) Severe pain.

Pain Frequency. To assess pain frequency, participants were asked, "How often during the past four weeks have you had pain or discomfort?" Responses were (0) Never, (1) A few times, (2) Often, and (3) Everyday or almost everyday.

Pain Severity. Pain intensity and pain severity scores were crossed with each other to capture pain severity. Participants who reported they did not experience pain were not asked this question and were consequently recorded as (0) Never on this item.

Activity Limitation. To assess whether participants experienced activity limitation, participants were asked, "Do you have a physical or health problem that limits or interferes with the amount or kind of day to day work or recreational activities you can engage in?" Response options were (0) No and (1) Yes. Participants who affirmed they had activity limitations were asked about the intensity and frequency of the activity limitation.

Activity Limitation Intensity. Activity limitation intensity was assessed using a single item that asked, "How much does this condition limit your activities, considering what your activities would be if you did not have the condition?" Responses were (0) Not at all, able-bodied, (1) Not very much, (2) Somewhat, and (3) Very much. Because participants who reported not having activity limitation were not asked this question, these participants were recorded as (0) Not at all, able-bodied.

Activity Limitation Frequency. To assess activity limitation frequency, participants were asked, "How often does this condition interfere with or limit your usual activities?" Responses were (0) Never, (1) Rarely or not very often, (2) Sometimes, (3) Often, and (4) All the time.

Because participants who reported not having activity limitation were not asked this question, these participants were recorded as were (0) Never.

Disability. Participants who were classified as having a disability in the screening process were asked, "Earlier someone in your household [or the respondent] told us that you had a condition or physical health problem that limits the kind or amount of activity that you can carry out (such as work, housework, school, recreation, shopping, or participation in social or community activities). I just want to confirm with you now whether that is correct." Participants who confirmed having a disability were coded as (1) Yes. All other responses were coded as (0) No.

Diabetes. To assess whether participants had been diagnosed with diabetes by a physician, participants were asked two questions, "In the past two years, have you had diabetes?" and "Was this health problem diagnosed by a physician?" Participants who responded that a physician had diagnosed them with diabetes were coded as (1) Yes. All other responses were coded as (0) No.

Arthritis. To assess whether participants had been diagnosed with arthritis by a physician, participants were asked two questions, "In the past two years, have you had arthritis?" and "Was this health problem diagnosed by a physician?" Participants who responded that a physician had diagnosed them with arthritis were coded as (1) Yes. All other responses were coded as (0) No.

Sociodemographic Factors

Gender. Gender was dichotomized (0=Male, 1=Female).

Marital Status. Marital status was operationalized as (0) Married, (1) Separated, (2) Divorced, (3) Widowed, and (4) Never been married.

Socioeconomic Status. Individual SES was based on the composite scores of three equally-weighted items: occupational prestige, household income of each participant, and education.[132] To circumvent problems with missing data, scores for each of the three SES dimensions were standardized, summed, and divided by the number of dimensions on which the data were available risks.[71]

Language preference. Language preference was assessed by asking respondents, "What language do you prefer to speak?" Responses were (0) English most or all the time, (1) Spanish and English equally, (2) Spanish most or all of the time.

Country of Birth and Years in the U.S. Country of birth and years in the U.S. were captured in a single variable to minimize issues with multicollinearity in the regression models. Country of birth was assessed by asking respondents, "Where were you born?" Responses were (1) U.S., (2) Cuba, (3) Columbia, (4) Mexico, (5) Dominican Republic, (6) Nicaragua, (7) Puerto Rico, (8) Guatemala, (9) El Salvador, and (10) Other. These response categories were collapsed into three categories: (0) U.S., (1) Cuba, and (3) Other Latin American Country. Years in the U.S. was measured with one item, "How many years have you been living in the United States?" Response options were categorized as (0) one to 10 years, (1) 11 – 72, and (3) U.S.-born to capture those who were born in the United States. To combine the country of birth and years in the U.S. variable, five categories were developed: (0) U.S.-born, (1) Cuba (1 – 10 years living in the U.S.), (2) Cuba (11 or more years living in the U.S.), (3) Other Latin American Country (1 – 10 years living in the U.S.), (4) Other Latin American Country (11 or more years living in the U.S.).

Age. Age was measured by asking participants, "How old are you?" Age is continuous, ranging from 18 to 96 years.

Health Insurance. To assess whether respondents had health insurance, respondents were asked, "Do you currently have health insurance?" Response options were (0) No, and (1) Yes.

Difficulty Meeting Medical Expenses. To capture whether respondents had difficulty meeting medical expenses, respondents were asked, "When you think of your financial situation overall, how difficult is it for you to meet the following needs: Medical Expenses?" Responses were (0) Not at all difficulty, (1) Somewhat difficult, (2) Very difficult.

Prayer. To capture prayer frequency, participants were asked, "About how often do you pray?" Response options ranged from (0) Never to (5) Several times a day.

Analytic Strategy

The present analyses were conducted in four steps. First, descriptive statistics were conducted to examine the social and health characteristics of the sample. Second, latent class analysis was used to identify coping typologies based on patterns across six personal coping resources: divine fate, spiritual coping, ethnic centrality, ethnic connectedness, mastery, and self-esteem. Two-class, three-class, four-class, and five-class LCA models were tested. To identify the best-fit model, the Akaike information criterion (AIC) and the Bayesian information criterion (BIC) were used to compare competing models and examined the relative balance of model fit and parsimony. Third, bivariate analyses were used to examine the social and physical health characteristics associated with membership across the personal resource classes. A one-way analysis of variance (ANOVA) was performed for continuous social and health characteristics while a chi-square test was performed for categorical social and health characteristics. Fourth, multivariate linear regression was used to assess the association between coping profiles and (a) self-rated general health and (b) depressive symptoms, while controlling for demographic

characteristics (gender, socioeconomic status, language preference, country of birth and years living in the U.S., and age), health insurance, and two chronic health conditions (activity limitation frequency and arthritis).

Prior research has documented the relationship between activity limitation and depressive symptoms. For instance, functional limitations impede individuals' ability to fulfill social roles and responsibilities[107], they increase the risk of depression[107], and they are associated with a loss in productivity through increased work disability, work loss (e.g. absenteeism), or work limitation.[133] Diminished ability to carry out social roles can increase social isolation and exacerbate depressive symptoms.[134] Consequently, activity limitation frequency and arthritis were treated as covariates in the regression models. Both health outcomes (depressive symptoms, perceived general health) are continuous variables so multivariate linear regression was conducted.

Results

The majority of participants were born outside of the United States, have been living in the U.S. for over 20 years (52%), and were born in Cuba (50%). The sample consists of an almost equal distribution of men (47%) and women (53%). The average age among participants is 56 years, and seventy-three percent of participants are 45 years of age or older, which is particularly well-suited for examining patterns in coping resources among midlife and older Latinos. Overall, over one-fifth of the participants in the sample have a disability, approximately 30% have arthritis, and 12% have been diagnosed with diabetes. Participants' social and health characteristics are presented in Table 3.1.

Table 3.1

Sample Characteristics, Disabilities Dataset, 2000-2001

	All (N=629)	
	Percent	*Mean (SD)*
Self-rated General Health [0,4]		1.23 (0.93)
Depressive Symptoms [0,48]		15.50 (9.01)
Stress Exposure		
Chronic Stress [0, 47]		4.68 (5.96)
Recent Life Events [0, 8]		0.83 (1.37)
Major Life Events [0, 7]		1.00 (1.24)
Daily Discrimination [0, 8]		3.28 (4.72)
Major Discrmination [0, 6]		0.45 (0.95)
Neighborhood Stressors [0, 30]		10.84 (10.89)
Total Stress Exposure [-3.80, 18.29]		0.87 (3.77)
Pain Intensity		
No Pain	65.18	
Mild Pain	7.79	
Moderate Pain	13.83	
Severe Pain	13.20	
Pain Frequency		
Never	65.18	
A Few Times	14.79	
Often	10.17	
Everyday or Almost Everyday	9.86	
Pain Severity [0, 9]		1.49 (2.61)
Activity Limitation Intensity		
Not At All, Able-bodied	69.48	
Not Very Much	3.97	
Somewhat	13.20	
Very Much	13.35	
Activity Limitaton Frequency		
Never, Able-bodied	69.48	
Rarely or Not Very Often	2.54	
Sometimes	5.88	
Often	12.08	
All the Time	10.02	
Disability		
Yes	22.89	
No	77.11	
Diabetes		
Yes	11.45	
No	88.55	
Arthritis		
Yes	28.93	
No	71.07	

Health Insurance		
Yes	71.38	
No	28.62	
Difficulty Meeting Medical Expenses		
Not At All Difficult	55.96	
Somewhat Difficult	24.96	
Very Difficult	19.08	
Routine Check-up with Healthcare Provider		
Yes	73.77	
No	26.23	
Physical Activity		
Non-active	5.72	
Active	94.28	
Prayer		
Less Than Once a Week	9.38	
Once a Week	8.60	
Several Times a Week	22.26	
Once a Day	24.48	
Several Times a Day	35.29	
Gender		
Female	53.10	
Male	46.90	
Marital Status		
Married	49.28	
Separated	7.79	
Divorced	16.69	
Widowed	12.88	
Never Been Married	13.35	
Socioeconomic Status (SES)		
Low SES	38.79	
Moderate SES	30.37	
High SES	30.84	
Language Preference		
English Most or All of the Time	65.82	
Spanish and English Equally	18.28	
Spanish Most or All of the Time	15.90	
Country of Birth and Years in the U.S.		
U.S.-born	9.54	
Cuba (1 - 10 years)	9.06	
Cuba (11+ years)	41.02	
Other Latin American Country (1 - 10 years)	9.86	
Other Latin American Country (11+ years)	30.52	
Age [18, 94]		56.41 (16.84)

Note. Variable ranges included in brackets. To assess total stress, each stress dimension was standardized using z-scores and summed. Scores below zero indicate below average stress exposure while scores above zero indicate higher than average stress exposure.

Personal Resource Classes

A two, three, four, and five-class model was tested to compare the relative balance of model fit and parsimony. The AIC and BIC indicators are presented in Table 3.2.

Table 3.2

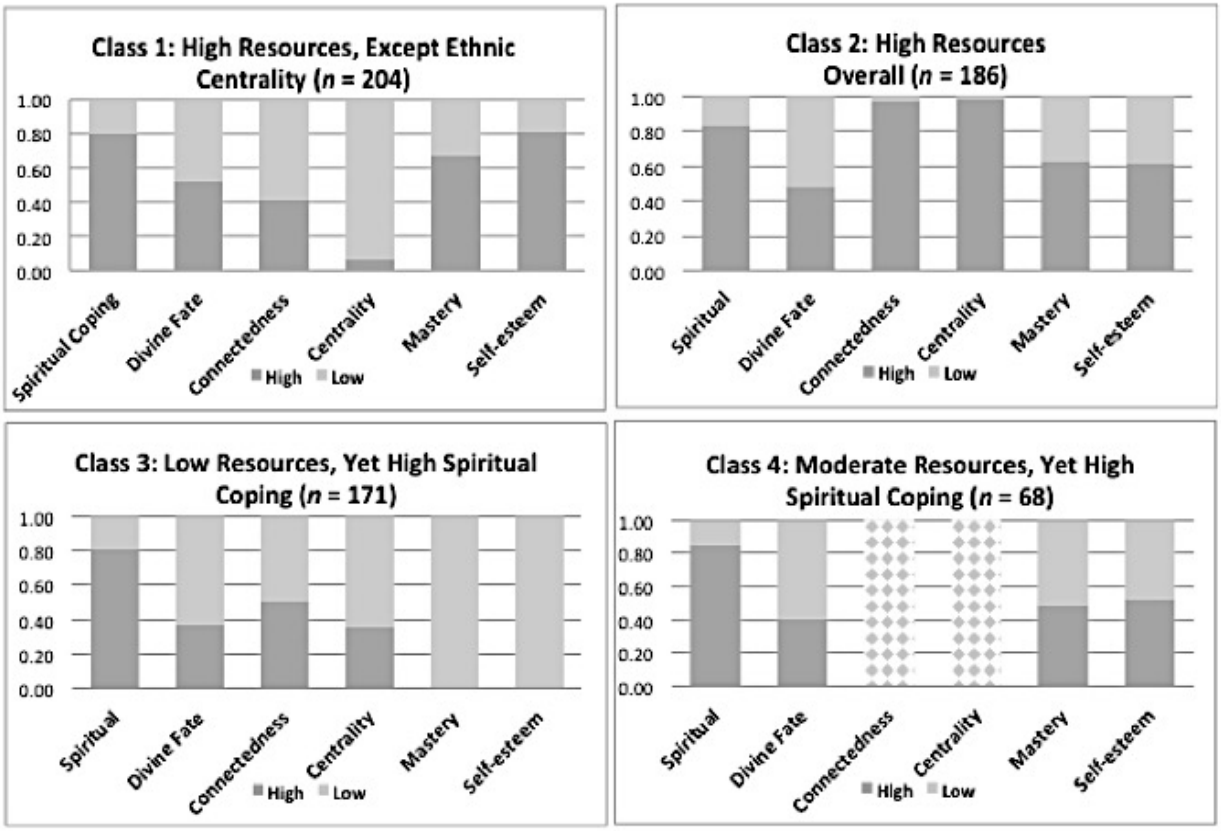
Latent Class Analysis Model Comparison

	Two-Class Model	Three-Class Model	Four-Class Model	Five-Class Model
AIC	586.89	294.89	210.2	191.12
BIC	662.44	410.44	365.74	386.66
Adjusted BIC	608.47	327.89	254.62	246.97

Relative to the two-class model (AIC = 586.89, BIC = 662.44), three-class model (AIC = 294.89, BIC = 410.44), and five-class model (AIC = 191.12, BIC = 386.66), AIC and BIC indicators suggest the four-class model (AIC = 210.20, BIC = 365.74) was the best-fit model. As such, the four-class model was used to profile personal coping resources among Latinos in this sample. Class 1 was the most prevalent of the four classes, with 32% (n = 204) of the sample falling under Class 1. Class 2 was the second most prevalent class, with 30% (n = 186) of the sample being in Class 2. Twenty-seven percent (n = 171) of the sample comprised Class 3 and 11% (n = 68) of the sample comprised Class 4.

There were unique combinations of resources within and across the four personal resource classes. The probability of endorsing each personal resource within each of the four classes is visually depicted in Figure 3.1.

FIGURE 3.1. Probability of High Personal Resource across Classes



Note. Figure 3.1 depicts the probability of endorsing each personal resource within each of the four classes. Class 4 consists of individuals who did not report on the two ethnic identity dimensions; consequently, ethnic identity items are depicted as shaded columns under Class 4.

Class 1: High Resources, Except Ethnic Centrality. Those in Class 1 were characterized by having a high probability of being high on spiritual coping (80%), mastery (67%), and self-esteem (81%). Individuals in Class 1 had a low probability of endorsing ethnic centrality (6%) and an equal probability of endorsing high or low ethnic connectedness (41%) and divine fate (52%). Accordingly, this class was referred to as generally having high resources and low ethnic centrality.

Class 2: High Resources Overall. Class 2 was characterized by having the highest representation of all coping resources. Those in Class 2 had a high probability of endorsing all personal coping resources except divine fate. They had an equal probability (48%) of being high or low on divine fate. Because members of this class had a high probability of endorsing five of the six personal coping resources, this class was referred to as having high resources overall.

Class 3: Low Resources, Yet High Spiritual Coping. Individuals in Class 3 had a high probability of endorsing spiritual coping (82%). They had a near equal probability of endorsing high or low levels of ethnic connectedness (51%). Those in Class 3 were likely to endorse low levels of divine fate (37%), ethnic centrality (36%), mastery (1%), and self-esteem (1%). Overall, Class 3 members are low on all personal resources, other than spiritual coping.

Class 4: Moderate Resources, Yet High Spiritual Coping. Those in Class 4 were characterized by having a high probability of endorsing spiritual coping (85%). They had an equal probability of endorsing low or high levels of mastery (49%) and self-esteem (53%), and they had a low to moderate probability (41%) of endorsing divine fate. Class 4 was comprised of individuals who did not report on the two ethnic identity dimensions. Consequently, ethnic identity items for Class 4 are depicted as shaded columns in Figure 1. In summary, members of Class 4 are high on spiritual coping, between moderate to low on divine fate. They are low on both indicators of personal control (mastery and self-esteem) and have no data on ethnic connectedness and ethnic centrality.

Overall, spiritual coping was high across all four resource classes. Divine fate generally had an equal probability of being high or low across the four resource classes. The likelihood of being high on ethnic centrality was independent of the ethnic connectedness, such that both ethnic identity items varied within and across the four resource classes. Although mastery and

self-esteem varied across crosses, they were present at similar levels within the classes, highlighting the interconnectedness between the two personal control indicators.

Social and Health Characteristics across Class Membership

Table 3.3 presents the distribution of participants' social and health characteristics across each of the four personal resource classes. Results indicate that there were significant differences across personal coping resources classes on five of the six dimensions of stress exposure, two physical health status indicators (activity limitation frequency and arthritis), and numerous sociodemographic characteristics, such as socioeconomic status, marital status, country of birth and years in the U.S., and health insurance status. For instance, there were significant differences in stress exposure, such that those in Class 1 experienced the highest levels of chronic stress and trauma and those in Class 3 experienced the lowest levels of chronic stress and trauma, $p = 0.020$. There were significant differences in activity limitation across the four classes, $p = 0.029$. Those in Class 3 had the highest proportion (32%) of its members facing activity limitation often or all the time, followed by those in Class 4 (22%), Class 1 (19%), and Class 2 (17%). The composition of those diagnosed with arthritis varied across the classes and the pattern mirrored that of activity limitation frequency, such that members of Class 3 experienced the highest proportion of arthritis (35%), followed by Class 4 (32%), Class 1 (27%), and Class 2 (24%). With regard to sociodemographic characteristics, country of birth proportions varied by class membership, $p < 0.001$. Class 4 consisted of the largest proportion of U.S.-born members (28%), whereas Class 3 consisted of the smallest proportion of U.S.-born members (1%).

Patterns in social and health characteristics across the resource classes suggest that those in Class 1 experienced the most chronic stress and trauma. Members of Class 2 experienced financial advantage, such that 67% had moderate or high SES. Overall, members of Class 2 did

not face more stress or health-related challenges than those in other classes. However, members of Class 2 reported more instances of major discrimination than those in other classes. Members of Class 3 experienced stress, health, and financial disadvantages. Overall, members of Class 4 are financial well-off, with 40% of Class 4 members having high socioeconomic status. Class 4 consists of the largest proportion (28%) of individuals born in the U.S.

Overall, patterns in social and health characteristics suggest that that resources classes characterized by the fewest personal resources also tend to be socially disadvantaged. For instance, members of Class 3 had the fewest personal resources and were disproportionately burdened across several stress, health, and financial domains. Nearly half of those in Class 3 (47.37%) are belong to the low socioeconomic strata and 22% find it very difficult to pay for medical expenses. Members of Class 3 also experience the highest rates of stress related to neighborhood crime. In addition to discrimination and financial issues, members of Class 3 experience the highest proportion of physical health challenges, with 32% experiencing activity limitation often or all of the time and over one-third having been diagnosed with arthritis. Overall, patterns in social and health characteristics suggest that each personal resource class is correlated with unique patterns in social and health risks and social advantage or disadvantage.

Social and Health Characteristics by Class Membership

	Class 1: High Positive Social Resources (N = 204)		Class 2: Frequent, Yet Negative, Family Relations (N = 186)		Class 3: Positive Family Resources and High Medical Mistrust (N = 171)		Class 4: Frequent, Yet Negative, Family Relations and High Medical Mistrust (N = 68)		p-value
	Percent	*Mean (SD)*	*Percent*	*Mean (SD)*	*Percent*	*Mean (SD)*	*Percent*	*Mean (SD)*	
Self-rated General Health [0,4]		1.05 (0.91)		1.03 (0.92)		1.63 (0.86)		1.31 (0.81)	p < 0.001
Depressive Symptoms [0,48]		13.47 (6.69)		13.93 (6.84)		19.49 (12.16)		15.88 (7.83)	p < 0.001
Stress Exposure									
Chronic Stress [0, 47]		5.47 (6.19)		4.83 (6.4)		3.56 (5.5)		4.68 (4.75)	p = 0.020
Recent Life Events [0, 8]		0.95 (1.53)		0.88 (1.22)		0.53 (1.2)		1.06 (1.51)	p = 0.007
Major Life Events [0, 7]		1.21 (1.32)		1.00 (1.15)		0.71 (1.13)		1.09 (1.4)	p = 0.002
Daily Discrimination [0, 8]		2.43 (3.45)		3.51 (4.66)		4.01 (6.04)		3.41 (4.09)	p = 0.010
Major Discrmination [0, 6]		0.46 (0.9)		0.56 (1.05)		0.32 (0.93)		0.41 (0.76)	p = 0.108
Neighborhood Stressors [0, 30]		10.68 (10.79)		10.02 (10.39)		12.81 (11.9)		8.62 (9.22)	p = 0.023
Total Stress Exposure [-3.80, 18.29]		1.11 (3.7)		1.02 (3.97)		0.41 (3.73)		0.89 (3.45)	p = 0.300
Pain Intensity									
No Pain	64.71		67.74		63.16		64.71		
Mild Pain	6.86		8.06		10.53		2.94		
Moderate Pain	17.65		8.60		13.45		17.65		
Severe Pain	10.78		15.59		12.87		14.71		
Pain Frequency									p = 0.213
Never	64.71		67.74		63.16		64.71		
A Few Times	16.67		16.13		12.28		11.76		
Often	6.37		9.68		13.45		14.71		
Everyday or Almost Everyday	12.25		6.45		11.11		8.82		
Pain Severity [0, 9]		1.48 (2.59)		1.34 (2.55)		1.61 (2.68)		1.63 (2.71)	p = 0.761
Activity Limitation Intensity									p = 0.153
Not At All, Able-bodied	71.08		76.34		61.99		64.71		
Not Very Much	4.90		3.23		4.09		2.94		
Somewhat	12.75		9.68		15.20		19.12		
Very Much	11.27		10.75		18.71		13.24		
Activity Limitaton Frequency									p = 0.029
Never, Able-bodied	71.08		76.34		61.99		64.71		
Rarely or Not Very Often	3.92		1.61		1.75		2.94		
Sometimes	6.37		5.38		4.09		10.29		
Often	9.8		8.06		17.54		16.18		
All the Time	8.82		8.6		14.62		5.88		
Disability									p = 0.062
Yes	24.51		16.13		27.49		25.00		
No	75.49		83.87		72.51		75.00		
Diabetes									p = 0.554
Yes	9.80		11.83		11.11		16.18		
No	90.20		88.17		88.89		83.82		
Arthritis									p = 0.157
Yes	27.45		24.19		34.50		32.35		
No	72.55		75.81		65.50		67.65		

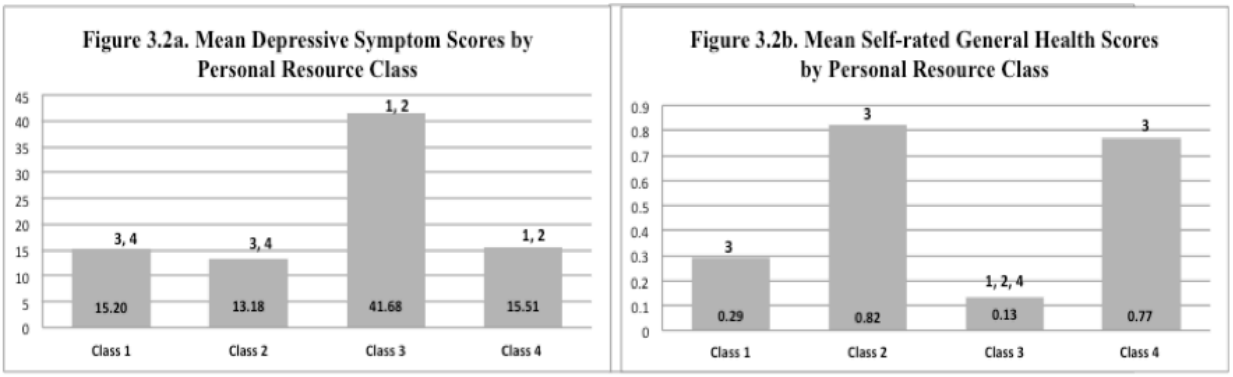
Health Insurance						p < 0.001
Yes	77.94	73.66	59.06	76.47		
No	22.06	26.34	40.94	23.53		
Difficulty Meeting Medical Expenses						p < 0.001
Not At All Difficult	66.18	60.75	36.26	61.76		
Somewhat Difficult	14.71	20.97	41.52	25.00		
Very Difficult	19.12	18.28	22.22	13.24		
Routine Check-up with Healthcare Provider						p < 0.001
Yes	79.90	76.34	59.06	85.29		
No	20.10	23.66	40.94	14.71		
Physical Activity						p = 0.093
Non-active	3.43	5.38	9.36	4.41		
Active	96.57	94.62	90.64	95.59		
Prayer						p = 0.036
Less Than Once a Week	13.24	6.45	8.77	7.35		
Once a Week	6.86	9.14	10.53	7.35		
Several Times a Week	18.63	20.97	28.07	22.06		
Once a Day	25	19.89	27.49	27.94		
Several Times a Day	36.27	43.55	25.15	35.29		
Gender						p = 0.413
Female	56.86	52.15	48.54	55.88		
Male	43.14	47.85	51.46	44.12		
Marital Status						p = 0.008
Married	55.39	50.54	44.44	39.71		
Separated	3.43	5.38	14.04	11.76		
Divorced	19.12	13.98	16.37	17.65		
Widowed	12.25	12.90	11.70	17.65		
Never Been Married	9.80	17.20	14.45	13.24		
Socioeconomic Status (SES)						p = 0.015
Low SES	37.25	33.33	47.37	36.76		
Moderate SES	31.37	30.11	32.16	23.53		
High SES	31.37	36.56	20.47	39.71		
Language Preference						p < 0.001
English Most or All of the Time	72.06	59.14	74.27	44.12		
Spanish and English Equally	16.18	22.04	15.20	22.06		
Spanish Most or All of the Time	11.76	18.82	10.53	33.82		
Country of Birth and Years in the U.S.						p < 0.001
U.S.-born	8.33	12.37	0.58	27.94		
Cuba (1 - 10 years)	12.75	7.53	9.36	1.47		
Cuba (11+ years)	47.55	36.56	47.95	16.18		
Other Latin American Country (1 - 10 years)	7.84	10.75	14.04	2.94		
Other Latin American Country (11+ years)	23.53	32.80	28.07	51.47		
Age [18, 94]		56.42 (16.62)	53.99 (17.92)	58.13 (15.55)	58.66 (17.1)	p = 0.080

Note. Variable ranges included in brackets. To assess total stress, each stress dimension was standardized using z-scores and summed. Scores below zero indicate below average stress exposure while scores above zero indicate higher than average stress exposure.

Depressive Symptoms and Perceived General Health across Personal Resource Classes

Figure 3.2a presents the mean depressive symptom scores across each of the four personal resource classes, controlling for demographic characteristics, health insurance, activity limitation frequency, and arthritis. Those in Class 2 had the fewest depressive symptoms (M = 13.18), followed by Class 1 (M = 15.20), Class 4 (M = 15.51), and Class 3 (M = 41.68). Members of Class 1 had significantly fewer depressive symptoms than those in Class 3 ($p <$ 0.001) and Class 4 ($p = 0.009$). Likewise, members of Class 2 had significantly fewer depressive symptoms than those in Class 3 ($p < 0.001$) and Class 4 ($p = 0.027$). Overall, results suggest that classes characterized by having more personal resources, such as Class 1 and Class 2, also had the fewest depressive symptoms. Classes with the fewest personal resources, such as Class 3, had the most depressive symptoms, all else equal.

Figure 3.2 Mean Depressive Symptoms and Self-Rated General Health Scores across Personal Resource Classes



Note. Figure 3.2 depicts the mean depressive symptoms and self-rated health scores after controlling for the following sociodemographic characteristics: gender, socioeconomic status, language preference, country of birth, years in the United States, age, health insurance, activity limitation frequency, and arthritis. On average, those in Class 2 had the fewest depressive symptoms, followed by Class 1, Class 4, and Class 3. On average, those in Class 3 had the best self-rated general physical health, followed by Class 1, Class 4, and Class 2. The denotation (1) above each column indicates that the corresponding class significantly differs from Class 1 on the health outcome. The denotations 2, 3, and 4 follow the same logic, with all levels of significance at $p < 0.005$.

Figure 3.2b presents the mean self-rated general health scores across each of the four personal resource classes, controlling for demographic characteristics, health insurance, activity

limitation frequency, and arthritis. Those in Class 3 had the best self-ratings of general health (M = 0.13), followed by Class 1 (M = 0.29), Class 4 (M = 0.77), and Class 2 (M = 0.82). On average, self-ratings of general health among those in Class 3 was significantly better than those in Class 1 ($p < 0.001$), Class 2 ($p < 0.001$), and Class 4 ($p = 0.023$). Although there were statistically significant differences across self-rated general health status, the average self-rated general health scores across all classes ranged from 0.13 to 0.82 on a scale of zero to four, suggesting that, after controlling for several demographic characteristics, health insurance, and chronic conditions, participants primarily reported having good self-rated general health.

Overall, findings from the multivariate linear regressions suggest that having more personal resources is associated with having fewer depressive symptoms and vice versa. The same pattern did not hold for self-rated general health, suggesting personal resources shape depressive symptoms and global health differentially.

Discussion

Understanding coping is critical for chronic disease management among aging Latinos. However, a paucity of research among Latinos has limited our understanding of coping processes among this population. Given the number of health and stress-related challenges they face, it is critical to determine the most effective points of intervention to ultimately optimize positive coping and self-management among this population. Thus, the primary goal of this study was to identify patterns in personal resources among Latinos and to examine the distribution of social and health characteristics associated with each personal resource profile. The second goal of this study was to examine depressive symptoms and self-rated general health across each of the personal resource profiles. There were several notable findings regarding the distribution of personal resources among Latinos and the relationship between personal resources and health.

Profiles of Personal Coping Resources

This study extends the knowledge base of coping resources among Latinos by empirically identifying four personal resource subgroups among a regional sample of Latinos. Prior coping research among Latinos has primarily examined one coping resource at a time, and only a couple of studies have examined the influence of multiple resources.[36] As such, patterns in coping resources available to or used among Latinos are underexplored. More recently, latent class analysis has been applied in the broader coping research to develop coping subgroups (i.e. low generic copers, active copers, and avoidant copers) among Black and Latino adolescents[135] and to examine communal coping (i.e. communal coping mothers, shared communal copers, independent communal coping children, independent communal children) in language brokering among Latinos.[136] However, latent class analysis had not yet been applied to examine patterns of personal resources among Latinos. By employing latent class analysis to the study of personal resources, it became evident that the distribution of spiritual, ethnic, and personal control resources varied across the four classes in distinct ways.

First, the two indicators of spiritual coping were present at steady levels across the four resource profiles. Spiritual coping was high across all resource classes, while divine fate generally had an equal probability of being low or high across the resource classes. Prior research has documented the centrality of spirituality and religion among Latinos and has largely documented Catholic and Protestant membership among Latinos.[137,138] Although this study does not capture religious affiliation, the finding that spiritual coping is high across all resource profiles is in line with research pointing to the centrality of spirituality among Latinos.

Second, the two indicators of personal control[43] (mastery and self-esteem) were present at similar levels. In Class 1 and Class 2, both mastery and self-esteem are high. In Class 3, both mastery and self-esteem are low. In Class 4, both mastery and self-esteem have an equal probability of being high or low. These findings suggest that the two indicators of personal control are related and present at similar levels.

Third, the distribution of the two indicators of ethnic identity varied within and across each class. For instance, although ethnic centrality and ethnic connectedness were both high in Class 2, ethnic connectedness was moderate and ethnic centrality was low among Class 1. These findings highlight the independence of ethnic identity sub-domains among subgroups of Latinos and provide evidence for scholars to measure distinct dimensions of ethnic identity. Prior research has conceptualized ethnic identity as a single construct[127] and assessed ethnic identity using one scale.[126] Future research would benefit from measuring the multiple factors underlying the ethnic identity construct. In summary, findings from this study empirically reveal four latent classes of personal resources and extend prior research by documenting patterns in the distribution of spiritual, ethnic identity, and personal control resources.

Socially Patterned Personal Coping Resources

Overall, findings from this study suggest that classes characterized by having the fewest personal resources were correlated with disadvantaged social status. Similarly, classes characterized with the most personal resources were correlated with advantaged social status. For instance, members of Class 2 were likely to have high levels of all personal resources, except divine fate, and were also financially advantaged, such that they comprised the largest proportion (67%) with high or moderate socioeconomic status.

Prior research has documented how mastery is lower among people from lower socioeconomic strata.[139] Findings from this study indicate that members of Class 3 had the fewest personal resources to draw on and also faced the greatest financial and social disadvantage. In particular, members of Class 3 had low levels of both personal control indicators, mastery and self-esteem. In addition to being financially disadvantaged, nearly all members of Class 3 were born outside of the United States—a much higher proportion than those in other classes. Prior research among native-born and foreign-born non-Latinos suggest that foreign-born individuals have lower levels of mastery than their native-born counterparts and that being a visible minority heighted the gap in mastery.[140] Research among foreign-born Latinos suggest persistent and daily chronic strain and inequalities across multiple social systems infringe on self-concept, diminish sense of mastery, and contribute to high levels of stress and exacerbate depressive symptoms.[141] Members of Class 3 are primarily foreign-born, are disproportionately burdened by daily discrimination, fear of crime in their neighborhood, physical health problems, and financially disadvantaged.

Interestingly, all resource profiles were characterized by a high likelihood of endorsing spiritual coping and a high to moderate likelihood of endorsing divine fate, which suggests that personal resources, such as spiritual coping and divine fate, remain relatively constant, despite social disadvantage. Prior research among Latinos from low, middle, and high-income backgrounds and among foreign and native-born Latinos suggests spirituality and religious coping are important resources for coping. Spiritual coping and religiosity are common tools used to cope with a broad array of global[142] and specific challenges, such as acculturative stress,[81] arthritis,[21] cancer,[35] and chronic pain.[27]

Taken together, assessing social correlates across personal coping resource classes highlights two key findings. First, findings support prior research that documents how disadvantaged social status (e.g. racial and ethnic minorities and economically disadvantaged populations) confers fewer personal control coping resources.[34,97] Second, spirituality-based personal resources remain stable among Latinos, despite social advantage.

Personal Coping Resources, Depressive Symptoms, and Self-rated General Health

Findings from this study highlight several nuances in the relationship between personal coping resource profiles and health outcomes. Overall, findings suggest that controlling for demographic characteristics, health insurance, and chronic health conditions, classes with fewer personal coping resources have more depressive symptoms, whereas classes with the most personal coping resources have the fewest depressive symptoms. Further examination into the personal resource patterns highlighted two interesting patterns.

First, patterns in personal resources and health outcomes suggest personal control indicators (i.e. mastery and self-esteem) are key drivers in shaping depressive symptoms. Personal resource classes characterized by high levels of mastery and self-esteem had the fewest depressive symptoms, whereas classes with low levels of mastery and self-esteem experienced the most depressive symptoms. Prior research has evaluated the role of personal control resources (i.e., mastery and self-esteem) on mental and global health outcomes. Research among Latinos in this area indicates that higher levels of self-efficacy and mastery are predictive of fewer depressive symptoms among Latinos.[143] Our findings suggest that classes with high levels of mastery and self-esteem (Class 1 and Class 2) had significantly fewer depressive symptoms than classes with low (Class 3) or moderate (Class 3) levels of mastery and self-esteem. In

managing chronic disease and other life challenges, for instance, higher levels of mastery and self-esteem can increase the likelihood of day-to-day management and resilience.[144]

Second, although spiritual coping is well-recognized for its health-protecting effects, high levels of spiritual coping alone did not protect from depressive symptoms as much as when spiritual coping was paired with other forms of personal resources, such as mastery and self-esteem. Spiritual coping has been studied as a source of resilience and as a coping mechanism when facing adversity; it has also been studied for its health-protective effects among Latinos.[21,37,83,145] It should be noted that this finding is with respect to spiritual coping, and findings from this study have no bearing on the role of related constructs, such as religiosity, church belongingness, or church networks. Overall, these findings suggest important nuances in the relationships between distinct personal coping resources and depressive symptoms.

Results on self-rated general health suggest that, controlling for demographic characteristics, health insurance, and chronic health conditions, members of Class 3 had significantly better self-rated general health than members of other classes. However, self-rated general health scores from both the univariate and regression analyses suggest participants across all classes predominantly rated their general health favorably. Although prior research documents how mastery is a strong predictor of self-ratings of health, findings from this study show mixed findings. Members of Class 3 had a low probability of endorsing mastery and self-esteem, yet they report had significantly higher self-ratings of general health than other classes. A potential explanation for these findings is that several physical health conditions (e.g. arthritis, activity limitation frequency) were controlled for during the multivariate regressions. In the bivariate analyses (see Table 2), members of Class 3 had the poorest self-rated general health. However, in controlling for demographic characteristics, health insurance, and chronic health

conditions, members of Class 3 had significantly better self-rated general health than members of other classes (see Figure 2). Thus, results should be interpreted in the context of having controlled for several chronic health conditions.

Limitations

Findings that arise from this study should be considered in light of a few limitations. First, data for this study are from a representative community-based study of community-dwelling Miami-Dade County residents, which limits the generalizability of the findings to the broader Latino population nationally. However, findings from this study are the first to identify latent classes of coping resources among Latino adults. Future studies using a nationally representative sample of Latinos are necessary to shed light on how Latinos draw on personal resources to cope with the various challenges they face. Second, this study uses cross-sectional data, which limits claims on causality due to temporal ambiguity. For instance, cross-sectional data cannot distinguish whether the coping patterns shape health outcomes or whether the stress and health problems deplete individuals' resources and further damage emotional well-being.[146] As such, this study describes the social and health correlates of the coping resource profiles. Although these are findings of association, they are extending the coping resources literature to identify patterns of coping resources among Latinos. Using longitudinal data to examine coping resource patterns is necessary to minimize these limitations. For instance, future studies using longitudinal data can observe predictors and health outcomes prospectively and can employ latent transition analysis to examine how membership in the personal resource profiles changes over time. Third, language of interview has been shown to differentially affect how individuals self rate their global health.[55,147] Participants were able to complete the interview in their preferred language (English or Spanish), which may differentially affect self-rated general health

responses. It is important to note that there were significant differences in language preference (English or Spanish) across the four resource profiles. However, multivariate analyses examining self-rated general health and depressive symptoms both controlled for language preference, minimizing the impact of this limitation.

Implications for Theory and Practice

Coping is a key pathway between the risk factors Latinos face and their respective health status. Given that coping resources are socially patterned,[34] this study sought to identify the distribution of personal resources among a sample of primarily middle aged and older Latino adults to determine how these patterns in coping resources relate to mental and general health outcomes. Findings from this study have important implications for coping research and for public health practice.

From a research standpoint, employing latent class analysis to examine patterns in personal coping resources provides flexibility in allowing one class to be low on one resource indicator and high on another. Findings from this study underscore the interconnectedness personal control resources (i.e., mastery and self-esteem) and the multidimensionality of ethnic identity resources. Prior research has pointed to the multidimensionality of ethnic identity[148] and the present study documents nuances in the distribution of ethnic centrality and ethnic connectedness, as they vary among Latinos within and across personal resource profiles.

Second, this study drew on the life course perspective and the stress process model. Correlating personal resource profiles with social status supports the concept of social pathways from life course framework. In particular, results extend prior research by documenting how disadvantaged status simultaneously relates to a broad range of personal resources. Results

provide evidence for the social patterning of personal resources, such that those from disadvantaged social statuses have fewer personal control resources.

The stress process model highlights the role of personal coping resources as tools to minimize the burden of life challenges. Findings from the multivariate linear regression models suggest that those with the fewest personal resources had depressive symptomatology scores well above the threshold of 16. A score of 16 is the recommended CES-D cutoff score for constituting a case for depressive symptomatology, although some scholars argue the cut off should vary between 16 – 20, depending on the population being studied.[149,150] The finding that personal control resources, in particular, appear to be the main drivers in shaping depressive symptoms contributes to the stress process model, by disentangling the relationship between distinct personal resources and health as they relate to Latinos.

Findings from this study have important implications for public health practice and, specifically, for the management of chronic health conditions and life stressors. First, results highlight two disadvantaged groups, those from socially disadvantaged groups and those from under-resourced groups. Findings from this study indicate those from socially disadvantaged groups (e.g. economically, stressors, foreign-born) have fewer personal resources, supporting prior research that disadvantaged status is linked with having fewer psychosocial resources in general.[34] These finding underscore the importance of allocating resources and promoting adaptive coping resources among socially disadvantaged groups.

Additionally, results underscore the health risks faced by under-resourced groups. After adjusting for various indicators of social disadvantage (e.g. gender, SES, language preference, country of birth, years in the U.S., age, activity limitation, arthritis), those with fewer personal resources still had more depressive symptoms, underscoring the importance of personal

resources in shaping mental health and highlighting the need to enhance personal coping resources among this group. Prior research has documented the positive role of personal resources on depressive symptoms and self-rated health among non-Latino populations.[79,94,143,144] However, prior research among Latinos has focused on one to two personal resources, whereas this study was able to document the relationship between a range of personal resources. By examining the combination of multiple personal resources simultaneously, findings highlight the intervention potential of personal control resources for reducing depressive symptoms. Prior research among Latinos has identified personal control resources as the best candidates for improving mental health. Future intervention work aimed at reducing depressive symptoms among Latinos may consider personal control resources as points for intervention.[151,152] As such, promoting the development of personal coping resources among under-resourced individuals of all age groups is necessary in minimizing the burden of depression.

Finally, results from this study provide further evidence that personal resources are relatively stable attributes, given that there were no differences in the distribution age across the resource profiles. As such, results from this study provide evidence on avenues for promoting positive coping and optimizing personal resources among Latinos throughout the life course.

CHAPTER 4
STUDY 2: PROFILES OF SOCIAL COPING RESOURCES AMONG LATINOS: IMPLICATIONS FOR DEPRESSIVE SYMPTOMS AND SELF-RATED GENERAL HEALTH

The Latino population has experienced unprecedented growth over the past few decades. Latinos are the largest minority population in the U.S., comprising 17.8% of the total U.S. population in 2016.[153] The proportion of Latinos in the U.S. is expected to increase to 25% by 2050.[2] Moreover, Latinos are an aging population. Among Latinos living in the United States, the number of Latinos 65 and older are projected to increase from 8% in 2016 to 21% by 2060.[2] Relative to Whites, Latinos fare worse on indicators of well-being, such as self-rated health[7] and depressive symptoms.[115,154] This aging population also faces a range of chronic health conditions and challenges in chronic disease management that further exacerbate health problems, such as a high rate of comorbidities, underutilization of mental health services, and medical mistrust.[3–5] Likewise, population health studies document how Latinos face a disproportionately high burden of risks (e.g. stress exposure, comorbidities, disability, pain) that exacerbate health problems and undermine the ability of Latinos to engage in health promoting behaviors to manage their health.[10–12,15,17,18,155] Consequently, a major public health challenge among Latinos is disease management. To improve disease management for this population, it is important to identify factors that can improve the well-being of Latinos with chronic conditions.

Coping has been recognized for its substantial role in improving the relationship between a variety of stresses and physical and mental health outcomes, and for its intervention potential.[23] The stress process model[79] and life course perspective[56] especially highlight social resources as tools that aid in the coping process. Social resources refer to the quality and extent of individuals' social relationships[98] and increase one's ability to manage stress and health-related

challenges and reduce the negative impact of these challenges.[23,25] Enhancing positive coping among this population necessitates understanding the social resources that Latinos draw on when coping with health and stress-related challenges. Given the paucity of research on social resources and health among Latinos, it is critical to identify the distribution of multiple social resources among Latinos and to evaluate social resources' relationships to social status and health.

To assess patterns in social coping resources, the present study identifies profiles of social coping resources among a sample of primarily middle-aged and older Latino adults. This study subsequently identifies social and health characteristics associated with each resource profile and evaluates self-rated general health and depressive symptoms across the social resource profiles.

BACKGROUND

Despite facing a disproportionately high burden of social stressors and socioeconomic disadvantage, Latinos experience better than expected health on a variety of health outcomes, such as low infant birth weight and mortality rates.[55,67,116,117] Nonetheless, relative to Whites, Latinos still fare worse on several indicators of well-being, such as depressive symptoms and self-rated health.[7,154] Depression is a serious medical illness, with a range of physical, cognitive, and mood symptoms.[156] The collective rate of mild, moderate, and severe depression among Latinos is 26%,[154] and national estimates suggest Latinos experience significantly higher depression chronicity than non-Hispanic Whites.[115,154] The burden of depression has significant implications for exacerbated health problems, quality of life, and economic outcomes. For instance, depression is linked with numerous adverse health outcomes, such as higher risk of stroke, heart disease, digestive problems, suicidal ideation, and all-cause mortality.[44,47–49,154]

Moreover, 80% of adults with moderate to severe depression face personal, social, and work-related difficulties due to their depression.[46] Furthermore, relative to Whites, prior research has documented high rates of somatization among Latinos with depression, which further exacerbates the adverse effects of depression on quality of life.[157] To add, prior research has often underestimated the extent of depression in this population as a result of high uninsured or underinsured status.[45] As such, evaluating depressive symptoms, rather than medically diagnosed depression, provides insights into the range of symptomatology, reduces the risk misclassification[41] and better captures distress among Latinos.

In addition to depressive symptoms, self-rated health is an indicator that captures individuals' overall well-being. Self-rated health is a subjective measurement based on the biopsychosocial model and is influenced by distinct dimensions of health and well-being, such as physical function, morbidity, disability, and functional limitation.[158] Self-rated health is widely used to assess global health in population health studies and is also used in clinical assessments, given that self-rated health is associated with physicians' assessments of health.[159,160] Relative to Whites, Latinos report poorer self-ratings of health and these disparities worsen over time.[7] Given that self-ratings of health have a high overall predictive validity for mortality among numerous and diverse populations,[161,162] the poorer self-ratings of health among Latinos point to a health disadvantage among this population. Given that Latinos face a disproportionately high burden of social, economic, and chronic health disadvantages, examining indicators of well-being—such as depressive symptoms and self-ratings of health—may better capture Latinos' overall health and quality of life.

Theoretical Framework

The life course framework and the stress process model have been applied individually or jointly to assess factors that contribute to differential health outcomes across diverse populations. Moreover, the life course framework and the stress process model underscore the role of social resources as tools that individuals draw on when coping with various stress and health-related challenges.[56,79] A life course perspective underscores phenomena at the juncture of social pathways, social change, and developmental trajectories.[56,120] The stress process model, with a focus on proximal processes, examines how social characteristics (e.g. social disadvantage) give rise to stress exposure and how social coping resources are underlying mechanisms shaping the impact that stress and physical health comorbidities have on health.[43,79,93] This study integrates the stress process model within the life course framework to (a) identify profiles of social coping resources among Latinos and (b) to evaluate the implications of these social resource patterns on well-being. Specifically, this study applies the life course principles of *social pathways* to evaluate how coping resources are socially patterned, *linked lives* to consider the interdependence of lives among persons, particularly in the context of coping, and *human agency* to highlight individual agency in the coping process. Drawing from the stress process model, this study considers the role of *social characteristics* (e.g. social and health disadvantage) in shaping social coping resources and considers distinct *social resource* domains to emphasize the complexity and diverse range of social resources Latinos draw on in the coping process. In line with the stress process model, this study examines the interrelationships between social stressors and social resources to assess two health indicators of well-being—depressive symptoms and self-rated general health. Integrating the stress process model within the life course framework to

examine social resource profiles and health among aging Latinos can illuminate how this population draws on distinct social resources to manage the various stressors they face.

Social Resources and Health

Coping resources, also referred to as psychosocial resources, are relatively stable, individual characteristics that develop over time and within the context of one's lived experiences and social exchanges.[23,79] Social resources refer to the quality and extent of individuals' social relationships[98] and include various dimensions of social support, social networks, and social integration.[37,43,163] Social coping resources improve the capacity of individuals to manage stressful events and are linked to lower levels of distress and better health outcomes.[23] In particular, a growing body of empirical research and theoretical frameworks have focused on the direct and indirect roles of social resources in shaping health. The coping literature and the stress process model have been operationalized social resources in a range of ways, such as social support, social networks, family social support, and friend social support.[43] Social resources are shaped by contemporary and developmental life conditions[93] and are socially patterned, such that socially disadvantaged groups (e.g. racial and ethnic minorities and those from low socioeconomic strata) tend to have fewer resources, such as smaller social networks, accessible to them.[34,164]

Social support is a commonly studied social resource, particularly because individuals' coping processes are shaped by the relationships they have with others. However, Pearlin (1999) argued that a key limitation of examining social support in the coping literature is the striking absence of the donors of support.[79] To identify the most effective social resource mechanisms for health promotion, the social support and quality of relationships from distinct networks (e.g. family, friends, medical team) must be evaluated. Thus, this dissertation study focuses on the

presence and absence of social resources by examining the donors of both positive and negative support (e.g. friends, family, providers) and indicators of a perceived lack of social resources (i.e. loneliness).

Relationships with Family and Friends, Medical Mistrust, and Loneliness

The present study examines the presence and absence of social resources across three social resource domains and perceptions of loneliness: family relationships, friend relationships, patient-provider relationships, and loneliness. Examining distinct dimensions of social resources can shed light on the social distribution of multiple indicators of social resources, can identify linkages between combinations of social resources and health, and can identify under-resourced groups for health promotion efforts.

Prior research has extensively documented family as a central part of life among Latinos.[165–168] As a result, several family-related core cultural values have been described among Latinos, such as *familismo* (loyalty to the family) and *allocentrism* (needs of group are placed before needs of the individual).[169,170] Relative to those from European cultural backgrounds, Latinos report higher levels of *familismo*.[171,172] Scholars have explored the role of family on health, with some scholars arguing that Latinos' social resources are one explanation for the Latino epidemiological paradox.[173] In other words, Latinos' family networks, in particular, may explain the better than expected health outcomes experienced by Latinos, relative to Whites. In particular, *familismo* values have been linked with advantageous health outcomes, such as high levels of well-being[172] and favorable pregnancy[174] outcomes. However, *familismo* has also been linked with high levels of psychological distress,[175] which scholars posit is due to family conflict or the strain of meeting family obligations.[176,177] Prior research on the role of family on health underscores the need to disentangle the ways that positive and negative dimensions of family

resources impact health and well-being. Given the centrality of family relationships and health, four domains of family relationships (positive family support, family pride, family interaction, and negative family support) were examined in the present study to better understand how patterns in family relationships are linked with mental and global health outcomes.

In addition to positive and negative family domains, the relationship between other social resources and health should be considered. In particular are Latinos' relationships with friends and medical providers. First, prior research has documented that Latinos report higher levels of family support than Whites, but report lower levels of social support from friends.[178] Friend social support is a significant predictor of informal or formal treatment and is a pathway to informal mental health services.[179] Research suggests that the distribution of friend support varies among Latino subgroups.[178] Furthermore, the role of friend social support on health is mixed, such that friend social support has been found to have both positive[180] and negative[181] influences on mental health. Moreover, whether friends or family are more important in promoting mental health is unclear. There is research suggesting that friendships, rather than family relationships, are more important in supporting mental health,[182,183] whereas other studies have found evidence of the contrary.[184] Second, medical mistrust has been increasingly studied among Latinos and is linked with underutilization of health care services,[185] lower medical adherence,[186] and lower satisfaction with health care services.[187–189] Given that Latinos are an aging population and face a high burden of chronic health conditions, relationships with medical teams are important to consider for chronic disease self-management and for promoting pathways for successful aging.

Third, there is a growing body of research among the general population on the impact of social isolation and loneliness on health and well-being. Loneliness refers to feelings of being

isolated and disconnected from others.[190] Although loneliness is distinct from assessing social relationships with family, friends, and the healthcare teams, it is important to note that regular interactions with others and the psychological state of feeling lonely are fundamentally distinct. By assessing individuals' perceptions of loneliness, this study aims to capture individuals' connections with others (e.g. family, friends, the healthcare system) and the extent to which individuals feel lonely. Furthermore, loneliness has been linked with physical, psychological, and suicidal risks among the general population,[191] yet the research among Latinos in this areas is scant. Among Latinos, loneliness is linked with hopelessness and suicidal behaviors.[192] Scholars have argued that low levels of loneliness among Latinos may be protective to health.[193]

In summary, a plethora of research has documented the role of distinct social resources on health. However, the combined relationship between several domains of social resources and health remain underexplored, particularly among Latinos. As such, this study aims to fill an important gap in the literature: by examining how distinct patterns in social resources relate to mental and global health indicators of well-being among Latinos.

Gaps in the Relationship between Social Resources and Health among Latinos

A substantial body of literature has examined the role of individual forms of social resources (e.g. family cohesion, perceived social support) on health. However, explicitly assessing the relationship between individual social resources and health overlooks the naturally complex and multidimensional state of social resources. More recently, a growing body of literature has examined the role of social resource typologies on health[182,194,195] and other indicators of well-being, such as morale.[183] The research on typologies of social resources has primarily been conducted with samples of older adults in Europe,[194] Israel,[183] and Japan.[196] Studies conducted with samples from the U.S. have primarily examined social resources

typologies among aging non-Latino populations.[182,195,196] Despite the theoretical and empirical evidence underscoring the importance of social resource typologies for health,[182] the research examining social resource typologies among Latinos is scant. As such, several gaps within the Latino coping literature remain.

First, the majority of coping research among Latinos focuses on how this population responds to various stressors and health problems, such as cancer,[37] chronic pain,[27] and arthritis.[100] Primarily assessing disease-specific coping strategies does not shed light on coping tendencies Latinos use across a range of challenges. In particular, there is a paucity of research that has focused on the resources—in particular the social resources—which Latinos draw on to cope with adverse circumstances. Consequently, there is a limited understanding of the distinct social resources Latinos have available, which limits our understanding of the tools they can draw on when coping with the various challenges they face across the life course. Identifying the coping tools Latinos tend to draw on can inform strategies for positive coping and culturally tailored intervention efforts.

Second, among studies that examine social resources among Latinos, typically only one social resource domain (e.g. family relationships) is examined. For instance, some scholars have examined the role of family dynamics in the relationship between acculturation and mental health.[168] However, examining the role of a single social resource domain obscures the complexity of distinct social resources, obscures the interconnections between distinct social resources, and overlooks the naturally complex and multidimensional state of social resources. As research among non-Latinos populations[182] has highlighted, a person-centered approach examines social resources in their naturally complex state and captures the multidimensional patterns of individuals' social resources. A small, yet growing, body of research is applying

person-centered approaches, such as cluster analysis and latent class analysis (LCA), to identify social resource typologies. However, no such studies among Latinos in the U.S. have applied this approach.

Third, prior research examining social resources and health among Latinos has assessed the impact of resources on a single health outcome at a time, with the majority of the research focusing on mental health outcomes, such as depression. For instance, scholars have assessed the role of family processes[144,167] and family and friend networks[184] on depression. Fewer studies have assessed the relationships between social resources and self-rated health, introducing potential for misclassification bias. Misclassification bias refers to biases in the causal effects between social arrangements and mental health consequences.[41] Misclassification bias arises from the application of a disorder-specific model to the overall mental health consequences of various social arrangements, such as racism and the stratification of health. The consequences (e.g. depression, anxiety) of these diverse social problems are not limited to a single disorder.[41] Consequently, examining the relationship between social arrangements and a single disorder can lead to overestimations of who is "well" by misclassifying individuals who have other disorders as "well". This can ultimately produce underestimates of the significance of these social risk factors in shaping health outcomes.[42,43] To minimize classification bias, a broader range of health outcomes must be simultaneously analyzed.[41] Ultimately, capturing a global dimension of health (i.e. self-ratings of health), in addition to depressive symptoms, provides insight into the unique ways Latinos risks and resource patterns shape distinct indicators of health and well-being.

Purpose of the Study

The purpose of this study is to identify the social coping resources that Latinos draw on to cope with the various health and stress-related challenges they face and to understand the

health implications of these social coping patterns. The study aims to (1) identify profiles of social coping resources (positive family support, family pride, family interaction, friend social support, negative family support, medical mistrust, and loneliness) among Latinos; (2) determine the social and physical health characteristics associated with social resource profiles; and (3) evaluate differences in self-rated general health and depressive symptoms across social resource profiles. To effectively promote positive coping among Latinos facing a broad array of challenges, it is critical to understand the patterns, distribution, and health implications of social resources among Latinos.

METHODS

Study Design and Sample

Data are from the "Disabilities" dataset, a community-based study of community-dwelling Miami-Dade County residents. All interviews were administered in English or Spanish. This dataset includes extensive measures on psychosocial resources (e.g. personal resources, social resources), health behaviors, and physical and mental health outcomes among a sample of racially and ethnically diverse male and female adults in the Miami-Dade area. Wave 1 interviews were conducted between the years 2000 to 2001 (n = 2,000). One-thousand individuals were screened as having activity limitations and 1,000 individuals with no activity limitations were matched on age, gender, and race and ethnicity.[108] Wave 2 interviews were conducted between the years of 2003 to 2004 (n = 1,600). Wave 2 was comprised of a representative subsample of 1,600 Wave 1 participants, such that 800 participants had a disability and 800 counterparts had no disability. All interviewers were computer assisted and administered in participants' preferred language (English or Spanish).[108] Interviewers obtained

informed consent prior to commencing each interview. Additional details on the Disabilities dataset have been described elsewhere.[108]

The sample from the Disabilities dataset is representative of the Miami-Dade County population. Participants were sampled so as to achieve equal representation (25% each) of Cuban, Non-Cuban Latino, Black, and non-Hispanic White racial and ethnic groups.[108] The focus of the study was on physical limitations. Individuals were excluded from the study if their limitations arose from social, psychological, or cognitive causes or if they had Alzheimer's disease or dementia or visual, auditory, or speaking impairments.[108] To examine patterns of coping resources among Latinos, data for this study are restricted to Latinos only (n = 605). Half of the sample was born in Cuba (50.8%), followed by the United States (9.8%), Colombia (9.6%), Nicaragua (5.1%), Puerto Rico (5.3%), Dominican Republic (3.3%), Guatemala (1.2%), El Salvador (0.8%), and Mexico (0.99%). About 13.9% of the sample was born in a Latin American country outside of those listed here.

Measures

Health Outcomes

Depressive Symptoms. Depressive symptoms were measured using the 20-item Center for Epidemiologic Studies Depression (CES-D) scale ($\alpha = 0.881$), which asks participants about depressed mood, sleep disturbance, appetite loss, and feelings of guilt and worthlessness in the last month.[123] Response options were (0) Not at all, (1) Occasionally, (2) Frequently, and (3) Almost all the time. Positive items were reverse coded. The possible range of scores is 0 - 60, with higher scores indicating more depressive symptoms.

Self-rated General Health. Self-rated general health was measured using a four-item scale from the RAND 36-Item Health Survey, General Health Subscale.[124,125] Participants were

asked (a) “You seem to get sick a little easier than other people (reverse coded); (b) “You are as healthy as anybody you know”; (c) “You expect your health to get worse (reverse coded)”; and (d) “In general, your health is excellent”.[51] Response options were (0) Definitely true, (1) Mostly true, (2) Don’t know, (3) Mostly false, and (4) Definitely false. Two items were reverse coded. Scores were summed and averaged, so that higher scores indicate worse self-perceived health. The possible range of scores is 0 – 4.

Social Resources

Positive Family Support was measured using an eight-item ($\alpha = 0.881$) modified and shortened version of the Provisions of Social Relations scale[197,198] and includes statements, such as “You feel very close to your family” and “Your family often lets you know that they think you are a worthwhile person.” Response options were (0) Not at all true, (1) Somewhat true, (2) Moderately true, and (3) Very true. The possible range of scores is zero to 24, with higher scores indicating a higher presence of positive family support. For the purpose of the LCA, the row mean was obtained for the family positive support variable and two response categories (1 = Low, 2 = High) were generated based on the 50th percentile.

Family Pride was measured using a six-item family pride scale ($\alpha = 0.921$) that was adapted from the work of Olson and colleagues[199] and has been used among diverse Latino subgroups in various contexts and has shown to be reliable.[200–203] Participants were provided statements, such as “You share similar values and beliefs as a family” and “You are proud of your family.” Response options were (0) Strongly disagree, (1) Disagree, (2) Agree, and (3) Strongly agree. The possible range of scores is zero to 18, with higher scores indicating a higher presence of family pride. For the purpose of the LCA, the row mean was obtained for the family

pride variable and two response categories (1 = Low, 2 = High) were generated based on the 50th percentile.

Family Interaction was assessed using a single item asking, "How often do you see relatives or talk to them on the phone?" Responses were (0) You hardly ever see them or talk to them, (1) Once or twice a month, (2) Once or twice a week, and (3) Everyday or about everyday. For the purpose of the LCA, responses were recoded as (1) Low (Hardly ever and Once or twice a month) and (2) High (Once or twice a week, Everyday, or About everyday).

Friend Social Support was measured using an eight-item ($\alpha = 0.955$) modified and shortened version of the Provisions of Social Relations scale.[197] Participants were provided with statements, such as "You have friends who would always take the time to talk over your problems, should you want to." Response options were (0) Not at all true, (1) Somewhat true, (2) Moderately true, and (3) Very true. Items were summed so that higher scores indicate higher levels of friend support. The possible range of scores is zero to 32. For the purpose of the LCA, the row mean was obtained for the friend support variable and two response categories (1 = Low, 2 = High) were generated based on the 50th percentile.

Negative Family Support was assessed using an eight-item ($\alpha = 0.836$) modified and shortened version of the Provisions of Social Relations scale[197] that includes statements, such as "Your family is always telling you what to do and how to act" and "Your family is often critical of you." Response options were (0) Not at all true, (1) Somewhat true, (2) Moderately true, and (3) Very true. The possible range of scores is zero to 24, with higher scores indicating a higher presence of negative family relationships. For the purpose of the LCA, the row mean was obtained for the negative family support variable and two response categories (1 = Low, 2 = High) were generated based on the 50th percentile.

Medical Mistrust was measured using a three-item scale (α = 0.903) that asked participants how they feel about the people who provide their medical treatment and about the treatment itself, such as "I worry that my doctor does not tell me the full range of options for my treatment" and "I worry that my doctor will put cost considerations above the care I need." Response options were (0) Strongly disagree, (1) Mildly disagree, (2) Neither agree nor disagree (3) Mildly agree, and (4) Strongly agree. The possible range of scores is zero to 12, with higher scores indicating a higher presence of medical mistrust. For the purpose of the LCA, the row mean was obtained for the medical mistrust variable and two response categories (1 = Low, 2 = High) were generated based on the 50th percentile.

Loneliness was assessed using three items (α = 0.664), such as "During the past few months, about how often have you felt lonely?" and "During the past few months, when you felt lonely, how lonely did you feel?" Items were summed so that higher scores indicate higher levels of loneliness. The possible range of scores is zero to nine. For the purpose of the LCA, the row mean was obtained for the loneliness variable and two response categories (1 = Low, 2 = High) were generated based on the 50th percentile.

Stress Exposure

Seven domains of stress exposure that take place across the life course were assessed: chronic stress, recent life events, major life events (trauma), daily discrimination, major discrimination, neighborhood stress, and total stress.

Chronic Stress. Chronic stress was measured using Wheaton's (1994) scale.[130] The scale was adapted to better capture stressors middle-aged and older adults are likely to face.[71] Chronic stress was assessed using 36 items relating to general experiences, (un)employment, relationships, and general strain. Example items include, "There is too much pressure put on you

to be like other people." Respondents were asked the extent to which each item is true. Responses were coded as (0) Not true, (1) Somewhat true, and (2) Very true. Responses to all variables were summed, with the range of possible scores being 0 - 72, with higher scores indicating a higher presence of chronic stress.

Recent life events. Recent life events were measured with a 32-item index that asked respondents if they had experienced a range of serious accidents, deaths, or financial crises in the past 12 months.[71] Example items include, "Did someone have a major financial crisis?" Responses to all 32 dichotomous (0 = No, 1 = Yes) items were summed, with the possible range of scores being 0 - 32.

Trauma. Trauma was assessed using 44 items that asked respondents whether they had experienced major life events—or trauma in one's lifetime (0 = No, 1 = Yes). An example item includes, "Did your father or mother not have a job for a long time when they wanted to be working?" Response options were summed, with the range of possible scores being 0 - 44.

Major and Everyday Discrimination. Major discrimination and daily discrimination were assessed using the Major Discrimination Scale.[131] Major discrimination was assessed using seven items. Respondents were asked if they had ever faced discriminatory events related to employment, education, or housing (0 = No, 1 = Yes). Example items include, "Have you ever been unfairly treated by the police (e.g. stopped, searched, questioned, physically threatened, or abused)?" The possible range of scores was zero to seven. Everyday or daily discrimination was measured using nine items ($\alpha = 0.864$) that include statements, such as "You are treated with less courtesy than other people." Response categories were (0) Never, (1) Rarely, (2) Sometimes, (3) Often, and (4) Almost always. Response options were summed, with the possible range of scores being 0 - 36.

Neighborhood Stressors. Neighborhood stressors was measured using 10 items related to the extent individuals were concerned about becoming a victim of crime. Example statements include, "Having someone break into your house and take your personal belongings while you are away." Response categories were (0) Not at all afraid, (1) Mildly afraid, (2) Moderately afraid, and (3) Very afraid. The possible range of scores is 0 - 30, with higher scores indicating higher levels of fear of neighborhood crime.

Total Stress. To measure total stress, each stress dimension was standardized using z-scores and summed. Scores below zero indicate below average stress exposure while scores above zero indicate higher than average stress exposure. The range was –3.66 to 21.68.

Physical Health Status and Health Behaviors

Pain. Participants who noted that they experienced pain were asked about the frequency and intensity of the pain. Those who indicated they did not having bodily pain were not asked questions about pain intensity or pain frequency and received "No pain" and "Never," respectively, as responses.

Pain Frequency was assessed by asking, "How often during the past four weeks have you had pain or discomfort?" Responses were (0) Never, (1) A few times, (2) Often, and (3) Everyday or almost everyday.

Pain Intensity was assessed using one item: "On average, how bad has your bodily pain been during the past four weeks?" Responses were (0) No pain, (1) Mild pain, (2) Moderate pain, and (3) Severe pain.

Pain Severity was obtained by crossing pain frequency and pain intensity with each other.

Activity Limitation was assessed using one item: "Do you have a physical or health problem that limits or interferes with the amount or kind of day to day work or recreational activities you can engage in?" Response options were (0) No and (1) Yes. Participants who indicated they had an activity limitation were asked about the intensity and frequency of the activity limitation.

Activity Limitation Frequency. To assess activity limitation frequency, participants were asked, "How often does this condition interfere with or limit your usual activities?" Responses were (0) Never, (1) Rarely or not very often, (2) Sometimes, (3) Often, and (4) All the time. Participants who reported not having activity limitation were not asked this question; these participants were recorded as were (0) Never.

Activity Limitation Intensity was assessed using a single item that asked, "How much does this condition limit your activities, considering what your activities would be if you did not have the condition?" Responses were (0) Not at all, able-bodied, (1) Not very much, (2) Somewhat, and (3) Very much. Participants who reported not having activity limitation were not asked this question and were recorded as (0) Not at all, able-bodied.

Disability. Participants who were identified as having a disability in the screening process were asked, "Earlier someone in your household [or the respondent] told us that you had a condition or physical health problem that limits the kind or amount of activity that you can carry out (such as work, housework, school, recreation, shopping, or participation in social or community activities). I just want to confirm with you now whether that is correct." Participants who affirmed having a disability were coded as (1) Yes. All other responses were coded as (0) No.

Diabetes. To assess whether participants had been diagnosed with diabetes by a physician, participants were asked two questions, "In the past two years, have you had diabetes?" and "Was this health problem diagnosed by a physician?" Participants who responded that a physician had diagnosed them with diabetes were coded as (1) Yes. All other responses were coded as (0) No.

Arthritis. To assess whether participants had been diagnosed with arthritis by a physician, participants were asked two questions, "In the past two years, have you had arthritis?" and "Was this health problem diagnosed by a physician?" Participants who responded that a physician had diagnosed them with arthritis were coded as (1) Yes. All other responses were coded as (0) No.

Health Insurance. To assess whether participants had health insurance, the following item was asked, "Do you currently have health insurance?" Response options were (0) No, and (1) Yes.

Difficulty Meeting Medical Expenses. To capture whether respondents had difficulty meeting medical expenses, respondents were asked, "When you think of your financial situation overall, how difficult is it for you to meet the following needs: Medical Expenses?" Responses were (0) Not at all difficult, (1) Somewhat difficult, (2) Very difficult.

Physical Activity was measured using federal guidelines from the U.S. Department of Health and Human Services (HHS), which state that individuals who engage in at least 150 minutes of moderate activity or 75 minutes of vigorous activity per week are "physically active," whereas those individuals who engage in fewer than 75 minutes of vigorous activity in a week are "physically inactive."[204] Physical activity was dichotomized as (0) Non-active and (1) Active.

Religious Networks and Spirituality. Religious Networks and Spirituality were measured using three dimensions: belonging to a church, church attendance, and prayer

frequency. To assess whether participants belonged to a church or place of worship, participants were asked, "Do you belong to a church, temple, synagogue, or mosque?" Response options were (0) No, (1) Yes, (2) Used to belong. To assess church attendance frequency, participants were asked, "Which of the following best describes how often you attend services at a church/temple/synagogue/mosque?" Response options were (0) Never, (1) Several times a year, (2) At least once a month, (3) Nearly every week, and (4) Every week or more. To capture prayer frequency, participants were asked, "About how often do you pray?" Response options were (0) Less than once a week, (1) Once a week, (2) Several times a week, (3) Once a day, and (4) Several times a day.

Sociodemographic Factors

Gender was dichotomized as (0) Male and (1) Female.

Marital Status was operationalized as (0) Married, (1) Separated, (2) Divorced, (3) Widowed, and (4) Never been married. To maximize the stability of the model, marital status was collapsed into three categories (0) Married, (1) Never Married, and (2) Formerly Married in the regression models.

Parental status was measured using one item: "Do you have children?" Response options were (0) No and (1) Yes.

Socioeconomic Status was calculated based on the composite scores of three equally-weighted items: occupational prestige, household income of each participant, and education.[132] To avoid problems with missing data, scores for each of the three SES dimensions were standardized, summed, and divided by the number of dimensions on which the data were available.[71]

Language preference was assessed using one item: "What language do you prefer to speak?" Responses were (0) English most or all the time, (1) Spanish and English equally, (2) Spanish most or all of the time.

Country of Birth and Years in the U.S. was captured in a single variable to diminish issues with multicollinearity in the regression analyses. Country of birth was assessed using one item: "Where were you born?" Responses were (1) U.S., (2) Cuba, (3) Columbia, (4) Mexico, (5) Dominican Republic, (6) Nicaragua, (7) Puerto Rico, (8) Guatemala, (9) El Salvador, and (10) Other. These response categories were collapsed into three categories: (0) U.S., (1) Cuba, and (3) Other Latin American Country. Years in the U.S. was measured with one item: "How many years have you been living in the United States?" Response options were categorized as (0) one to 10 years, (1) 11 – 72, and (3) U.S.-born to capture those who were born in the United States. To combine the country of birth and years in the U.S. variable, five categories were developed: (0) U.S.-born, (1) Cuba (1 – 10 years living in the U.S.), (2) Cuba (11 or more years living in the U.S.), (3) Other Latin American Country (1 – 10 years living in the U.S.), (4) Other Latin American Country (11 or more years living in the U.S.).

Age. Age was measured continuously by asking, "How old are you?" Age ranged from 18 to 94 years.

Analytic Strategy

The present analysis was conducted in four steps. First, univariate statistics were estimated to determine the social and health characteristics of the sample (see Table 4.1). Second, latent class analysis was used to identify social coping resource typologies using patterns across seven social resources: positive family support, family pride, family interaction, friend social support, negative family support, medical mistrust, and loneliness. Two-class, three-

class, four-class, and five-class LCA models were tested. The Akaike information criterion (AIC) and the Bayesian information criterion (BIC) were used to compare competing models, examine the relative balance of model fit and parsimony, and identify the best-fit model (see Table 4.2). Using the best-fit model, the probability of endorsing each social resource was depicted in Figure 14.. Third, the social and physical health characteristics associated with membership across the social resource classes were examined (see Table 4.4). One-way analysis of variance (ANOVA) tests were performed for continuous social and health characteristics while chi-square tests were performed for categorical social and health characteristics. Fourth, multivariate linear regression was used to evaluate the association between each social coping resource profile and (a) depressive symptoms and (b) self-rated general health (see Figure 4.2a and Figure 4.2b), while controlling for demographic characteristics (gender, marital status, socioeconomic status, country of birth and years living in the U.S., and age), and two physical health conditions (pain frequency and activity limitation intensity). To minimize over specifying the multivariate linear regression models, three steps were taken to determine the covariates: (1) identified the social and health characteristics that varied significantly across the resource classes (see Table 4.3), (2) determined which "risk factors" matter most for each health outcome by conducting bivariate analyses between each of the significant social and health characteristics and each health outcome (data not shown) and (3) referred to prior research highlighting the role of pain and activity limitation on depressive symptoms and self-rated health.[18,107,134]

RESULTS

Participants' social and health characteristics are presented in Table 4.1. The majority of participants were born outside of the United States (90%), with most of the sample born in Cuba (50%). Most had been living in the U.S. for over ten years (82%). The sample consists of

a similar distribution of men (46%) and women (54%). The average age among participants is 57 years, and 74% of participants are 45 years of age or older, highlighting the utility of these

Table 4.1

Sample Characteristics, Disabilities Dataset, 2000-2001

	All (N=605)	
	Percent	*Mean (SD)*
Self-rated General Health [0,4]		1.24 (0.93)
Depressive Symptoms [0,48]		15.77 (8.88)
Stress Exposure		
Chronic Stress [0, 47]		4.75 (6.03)
Recent Life Events [0, 8]		0.83 (1.36)
Major Life Events [0, 7]		0.99 (1.24)
Daily Discrimination [0, 8]		3.31 (4.72)
Major Discrmination [0, 6]		0.44 (0.94)
Neighborhood Stressors [0, 30]		10.81 (10.86)
Total Stress Exposure [-3.66, 21.68]		0.99 (4.15)
Pain Frequency		
Never	64.79	
A Few Times	14.55	
Often	10.41	
Everyday or Almost Everyday	10.25	
Pain Intensity		
No Pain	64.79	
Mild Pain	7.93	
Moderate Pain	14.05	
Severe Pain	13.22	
Pain Severity [0, 9]		1.53 (2.65)
Activity Limitaton Frequency		
Never, Able-bodied	69.26	
Rarely or Not Very Often	2.48	
Sometimes	5.79	
Often	12.07	
All the Time	10.41	
Activity Limitation Intensity		
Not At All, Able-bodied	69.26	
Not Very Much	3.80	
Somewhat	13.39	
Very Much	13.55	
Disability		
Yes	22.98	
No	77.02	
Diabetes		
Yes	11.24	
No	88.76	
Arthritis		
Yes	29.42	
No	70.58	

Health Insurance		
Yes	72.89	
No	27.11	
Difficulty Meeting Medical Expenses		
Not At All Difficult	55.87	
Somewhat Difficult	25.12	
Very Difficult	19.01	
Physical Activity		
Non-active	5.95	
Active	94.05	
Church Belongingness		
Yes	52.23	
No	35.54	
Used to Belong	12.23	
Church Attendance		
Never	15.54	
Several Times a Year	34.71	
At Least Once a Month	24.96	
Nearly Every Week	10.74	
Every Week or More	14.05	
Prayer		
Less Than Once a Week	9.42	
Once a Week	8.93	
Several Times a Week	22.15	
Once a Day	24.79	
Several Times a Day	34.71	
Gender		
Female	53.88	
Male	46.12	
Marital Status		
Married	48.93	
Separated	7.77	
Divorced	16.86	
Widowed	13.06	
Never Been Married	13.39	
Parental Status		
Yes	80.17	
No	19.83	
Socioeconomic Status (SES)		
Low SES	38.68	
Moderate SES	29.92	
High SES	31.40	
Language Preference		
English Most or All of the Time	65.29	
Spanish and English Equally	18.35	
Spanish Most or All of the Time	16.36	
Years in the U.S.and Country of Birth		
1 - 10 years (Cuba)	9.09	
11+ years (Cuba)	40.99	
1 - 10 years (Other Latino American Country)	9.26	
11+ years (Other Latino American Country)	30.74	
U.S.-born	9.92	
Age [18, 94]		56.58 (16.88)

Note. Variable ranges included in brackets. To assess total stress, each stress dimension was standardized using z-scores and summed. Scores below zero indicate below average stress exposure while scores above zero indicate higher than average stress exposure.

data for examining patterns in social coping resources among midlife and older Latinos. Overall, 23% of the participants in the sample have a disability, 30% have been diagnosed with arthritis, and 11% have been diagnosed with diabetes.

Social Resource Classes

To identify typologies of social coping resources, two, three, four, and five-class LCA models were tested and compared to examine the relative balance of model fit and parsimony. AIC and BIC indicators are presented in Table 4.2. Relative to the two-class model (AIC = 201.74, BIC = 267.82, adjusted BIC = 220.20), three-class model (AIC = 188.99, BIC = 290.31, adjusted BIC = 217.29), and five-class model (AIC = 185.26, BIC = 357.06, adjusted BIC = 233.25), AIC and BIC indicators suggest the four-class model (AIC = 179.43, BIC = 315.99, adjusted BIC = 217.57) was the best-fit model. As such, the four-class model was used to profile social coping resources.

Table 4.2

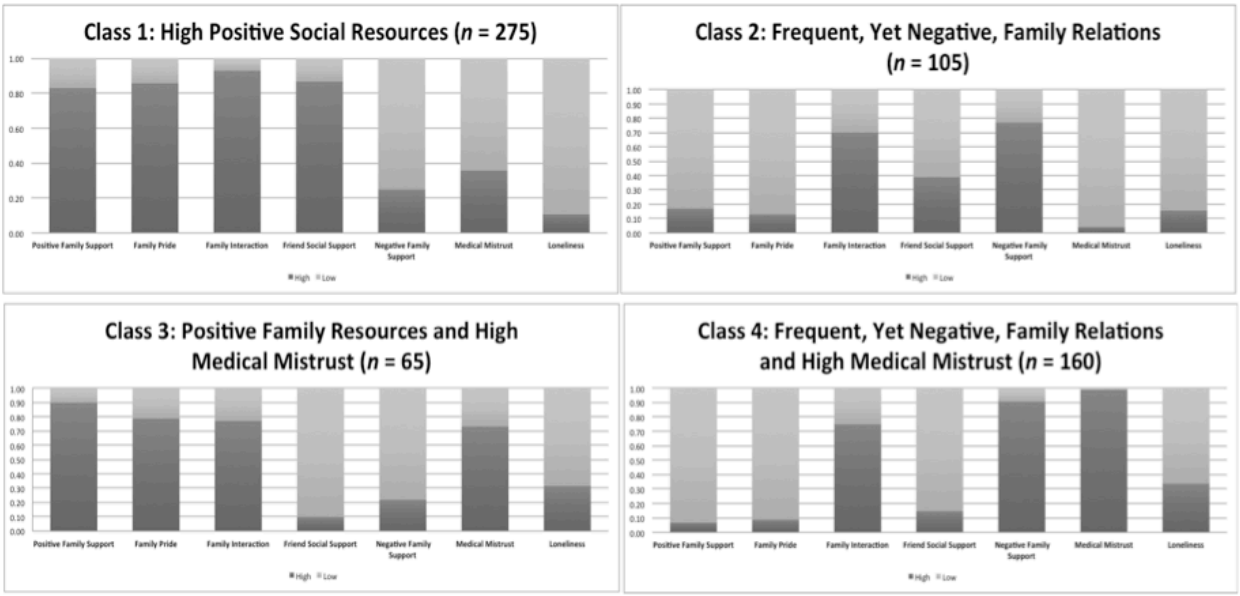
Social Resources: Latent Class Analysis Model Comparison

	Two-Class Model	Three-Class Model	Four-Class Model	Five-Class Model
AIC	201.74	188.99	179.43	185.26
BIC	267.82	290.31	315.99	357.06
Adjusted BIC	220.20	217.29	217.57	233.25

Figure 4.1 visually depicts the probability of endorsing each resource within and across the four social resource classes. Figure 1 also describes the distribution of the sample across the resource classes. For instance, 45% of the sample were in Class 1 (*n* = 275), 26% were in Class 4

(n = 160), 17% were in Class 2 (n = 105), and 11% were in Class 3 (n = 65). There were unique combinations of resources within and across the four social resource classes.

Figure 4.1 Probabilities of High Social Resources across Classes



Note. Figure 4.1 depicts the probability of endorsing each social resource within each of the four classes.

Class 1: High Positive Social Resources. Those in Class 1 were characterized by having the highest representation of social resources. In particular, members of Class 1 had a high probability of endorsing high levels of positive social resources, such as positive family support (83%), family pride (86%), frequent family interactions (93%), and friend social support (87%). Members of Class 1 had a low likelihood of endorsing negative family support (25%), medical mistrust (36%), and loneliness (11%).

Class 2: Frequent, Yet Negative, Family Relations. Class 2 was characterized by individuals who had a high likelihood of frequent family interactions (70%) and negative family support (77%). Members of Class 2 had a low probability of endorsing positive family support (17%), family friend support (13%), medical mistrust (4%), and loneliness (16%).

Class 3: Positive Family Resources and High Medical Mistrust. Class 3 was characterized by members who had a high likelihood of having family-based social resources. In particular, members of Class 3 were likely to endorse high levels of positive family support (90%), family pride (79%), and frequent family interactions (77%). Members of Class 3 were also likely to endorse high medical mistrust (73%) and had a low probability of endorsing friend social support (10%), negative family support (22%), and loneliness (32%).

Class 4: Frequent, Yet Negative, Family Relations and High Medical Mistrust. Class 3 members were characterized by having a high probability of endorsing frequent family interactions (75%), negative family support (91%), and medical mistrust (99%). Members of Class 3 had a low probability of endorsing all other social resources, such as positive family support (7%), family pride (9%), friend social support (15%), and loneliness (34%).

Overall, family interactions were frequent across all resource classes, but the type of family relationships (e.g. positive family support, family pride, negative relationships) varied. For instance, members of Class 1 and Class 3 had frequent and strong family resources, while members of Class 2 and Class 4 had frequent, yet poor, family support. Interestingly, loneliness was low across all classes and medical mistrust was high among Class 3 and Class 4. Social support from friends was high only among Class 1 members.

Social and Health Characteristics across Resource Classes

Table 4.3 presents the distribution of participants' social and health characteristics across each of the four social resource classes. There were significant differences across social resource classes on five of the seven dimensions of stress exposure, four physical health status indicators (pain frequency, activity limitation frequency, activity limitation intensity, and arthritis), and numerous sociodemographic characteristics, such as socioeconomic status, marital status,

country of birth and years in the U.S., and age. For instance, there were significant differences in pain frequency across the four classes ($p = 0.041$). Those in Class 4 had the highest proportion (23%) of its members experiencing pain often, almost everyday or everyday, followed by those in Class 2 (21%), Class 3 (20%), and Class 2 (17%). Activity limitation intensity varied across the four classes, $p = 0.012$. Those in Class 4 had the highest proportion (37%) of its members experiencing activity limitation often or all of the time, followed by those in Class 2 (25%), Class 3 (23%), and Class 2 (19%). 35%.

The distribution of age varied across social resource profiles, $p < 0.036$. Members of Class 3 ($M = 59.03$, $SD = 13.96$) and Class 4 ($M = 58.92$, $SD = 15.22$) were older than member of Class 1 ($M = 55.82$, $SD = 17.37$) and Class 2 ($M = 53.48$, $SD = 19.05$). Socioeconomic status varied across class, such that members of Class 1 comprised the largest proportion of those belonging to the high SES strata (41%) and those in Class 4 comprised the largest proportion of those belonging to the low SES strata (53%), $p < 0.001$. There were also differences in the distribution of church belongingness ($p < 0.005$) and church attendance ($p < 0.005$) patterns across the four resource profiles. Relative to other classes, members of Class 1 comprised the largest proportion of individuals who belong to a church (59%) and attend church nearly every week or more (29%).

Overall, patterns in social and health characteristics suggest that members of Class 1 have strong church networks and high levels of spirituality. For instance, 59% of Class 1 members belong to a church, 29% attend church nearly every week or more, and 66% pray at least once a day or more. Over 40% of members in Class 1 are from high socioeconomic strata and 68% are from moderate or high socioeconomic strata, suggesting the members of Class 1 are overall financially advantaged.

In addition, members of Class 2 have the weakest religious networks, such that they comprise the largest proportion of individuals who do not belong to a church (57%) and Class 2 members attend church less often than members of other classes. One-third of members of Class 2 do not have children. Relative to other classes, those in Class 2 experienced a low burden of pain frequency, activity limitation frequency, activity limitation intensity, and arthritis. Members of Class 2 comprise the largest proportion born in the U.S. (15%) and the highest proportion who prefer to speak Spanish most or all of the time (30%). Members of Class 2 experience the most daily and major discrimination and the lowest levels of fear towards neighborhood crime.

Members of Class 3 do not fall on the low-end or high-end of the spectrum for nearly any of the significant social and health characteristics. However, members of Class 3 have the highest proportion of doctor-diagnosed arthritis (37%), the highest proportion of medically insured (82%), and the highest proportion of members who are parents (89%).

Generally, members of Class 4 experience social, financial, and health disadvantages. Relative to other classes, members of Class 4 experience a high burden of pain frequency, activity limitation frequency, activity limitation intensity, and arthritis. For instance, 23% of Class 4 members report having pain often or more, 35% experience activity limitation often or all of the time, and 37% state that their activity is limited somewhat (16%) or very much (21%). About 53% of those in Class 4 are from low socioeconomic strata and 26% find it very difficult to pay for medical expenses. Although 98% of Class 4 members are foreign-born, members of Class 4 comprise the largest proportion of individuals who prefer to speak English most or all of the time (78%). Overall, patterns in social and health characteristics suggest that each resource class is correlated with unique patterns in risks (stressors and health challenges) and social advantage or disadvantage.

Table 4.3

Social and Health Characteristics by Resource Class (N = 605)

	Class 1:High Positive Social Resources (N = 275)		Class 2: Frequent, Yet Negative, Family Relations (N = 105)		Class 3: Positive Family Resources and High Medical Mistrust (N = 65)		Class 4: Frequent, Yet Negative, Family Relations and High Medical Mistrust (N = 160)		p-value
	Percent	*Mean (SD)*	*Percent*	*Mean (SD)*	*Percent*	*Mean (SD)*	*Percent*	*Mean (SD)*	
Self-rated General Health [0,4]		1.03 (0.88)		1.26 (0.91)		1.15 (1.02)		1.63 (0.88)	p < 0.001
Depressive Symptoms [0,48]		13.52 (6.22)		15.83 (8.97)		13.91 (6.93)		20.34 (11.37)	p < 0.001
Stress Exposure									
Chronic Stress [0, 47]		5.17 (5.71)		3.98 (5.19)		4.88 (5.82)		4.46 (7.06)	p = 0.326
Recent Life Events [0, 8]		1.00 (1.36)		0.82 (1.43)		0.92 (1.67)		0.49 (1.10)	p = 0.002
Major Life Events [0, 7]		1.16 (1.29)		0.99 (1.24)		0.97 (1.12)		0.71 (1.18)	p = 0.005
Daily Discrimination [0, 8]		2.70 (4.01)		4.61 (5.66)		3.29 (4.08)		3.53 (5.22)	p = 0.005
Major Discrmination [0, 6]		0.51 (0.98)		0.55 (1.10)		0.46 (0.83)		0.24 (0.77)	p = 0.017
Neighborhood Stressors [0, 30]		9.30 (9.93)		9.14 (10.45)		9.70 (10.20)		14.94 (11.89)	p < 0.001
Total Stress Exposure [-3.66, 21.68]		1.41 (3.99)		0.78 (4.54)		1.06 (4.32)		0.39 (4.06)	p = 0.094
Pain Frequency									p = 0.041
Never	62.18		73.33		70.77		61.25		
A Few Times	17.09		9.52		9.23		15.62		
Often	8.36		10.48		6.15		15.62		
Everyday or Almost Everyday	12.36		6.67		13.85		7.50		
Pain Intensity									p = 0.182
No Pain	62.18		73.33		70.77		61.25		
Mild Pain	6.91		6.67		4.62		11.88		
Moderate Pain	17.45		9.52		9.23		13.12		
Severe Pain	13.45		10.48		15.38		13.75		
Pain Severity [0, 9]		1.64 (2.74)		1.15 (2.33)		1.58 (2.96)		1.54 (2.55)	p = 0.446
Activity Limitaton Frequency									p < 0.001
Never, Able-bodied	72.36		76.19		67.69		60.00		
Rarely or Not Very Often	1.45		3.81		9.23		0.62		
Sometimes	8.73		1.90		3.08		4.38		
Often	9.45		6.67		10.77		20.62		
All the Time	8.00		11.43		9.23		14.38		
Activity Limitation Intensity									p = 0.012
Not At All, Able-bodied	72.36		76.19		67.69		60.00		
Not Very Much	2.55		4.76		9.23		3.12		
Somewhat	14.18		8.57		10.77		16.25		
Very Much	10.91		10.48		12.31		20.62		
Disability									p = 0.457
Yes	21.45		21.90		20.00		27.50		
No	78.55		78.10		80.00		72.50		
Diabetes									p = 0.210
Yes	12.00		6.67		16.92		10.62		
No	88.00		93.33		83.08		89.38		
Arthritis									p = 0.040
Yes	28.36		20.00		36.92		34.38		
No	71.64		80.00		63.08		65.62		

Health Insurance					p < 0.001
Yes	78.55	73.33	81.54	59.38	
No	21.45	26.67	18.46	40.62	
Difficulty Meeting Medical Expenses					p < 0.001
Not At All Difficult	68.36	62.86	60.00	28.12	
Somewhat Difficult	17.82	16.19	18.46	46.25	
Very Difficult	13.82	20.95	21.54	25.62	
Physical Activity					p = 0.331
Non-active	4.36	8.57	4.62	7.50	
Active	95.64	91.43	95.38	92.50	
Church Belongingness					p = 0.005
Yes	58.91	42.86	53.85	46.25	
No	33.09	43.81	35.38	34.38	
Used to Belong	8.00	13.33	10.77	19.38	
Church Attendance					p = 0.005
Never	16.73	16.19	10.77	15.00	
Several Times a Year	34.18	37.14	40.00	31.88	
At Least Once a Month	20.00	21.90	29.23	33.75	
Nearly Every Week	8.73	15.24	10.77	11.25	
Every Week or More	20.36	9.52	9.33	8.12	
Prayer					p = 0.093
Less Than Once a Week	8.36	16.19	7.69	7.50	
Once a Week	8.00	8.57	9.23	10.62	
Several Times a Week	18.18	23.81	26.15	26.25	
Once a Day	24.36	20.00	26.15	28.12	
Several Times a Day	41.09	31.43	30.77	27.50	
Gender					p = 0.332
Female	57.82	48.57	52.31	51.25	
Male	42.18	51.43	47.67	48.75	
Marital Status					p = 0.017
Married	53.09	42.86	52.31	44.38	
Separated	4.00	10.48	7.69	12.50	
Divorced	14.18	19.05	23.08	17.50	
Widowed	14.55	8.57	10.77	14.38	
Never Been Married	14.18	19.05	6.15	11.25	
Parental Status					p = 0.002
Yes	82.55	67.62	89.23	80.62	
No	17.45	32.38	10.77	19.38	
Socioeconomic Status (SES)					p < 0.001
Low SES	32.36	35.24	36.92	52.50	
Moderate SES	26.55	34.29	30.77	32.50	
High SES	41.09	30.48	32.31	15.00	
Language Preference					p < 0.001
English Most or All of the Time	60.36	54.29	72.31	78.12	
Spanish and English Equally	22.91	16.19	18.46	11.88	
Spanish Most or All of the Time	16.73	29.52	9.23	10.00	
Years in the U.S.and Country of Birth					p = 0.025
1 - 10 years (Cuba)	9.09	8.57	4.62	11.25	
11+ years (Cuba)	43.27	39.05	38.46	39.38	
1 - 10 years (Other Latino American Country)	6.91	10.48	7.69	13.12	
11+ years (Other Latino American Country)	28.73	26.67	38.46	33.75	
U.S.-born	12.00	15.24	10.77	2.50	
Age [18, 94]	55.82 (17.37)	53.48 (19.05)	59.03 (13.96)	58.92 (15.22)	p = 0.036

Note. Variable ranges included in brackets. To assess total stress, each stress dimension was standardized using z-scores and summed. Scores below zero indicate below average stress exposure while scores above zero indicate higher than average stress exposure.

Depressive Symptoms and Perceived General Health across Social Resource Classes

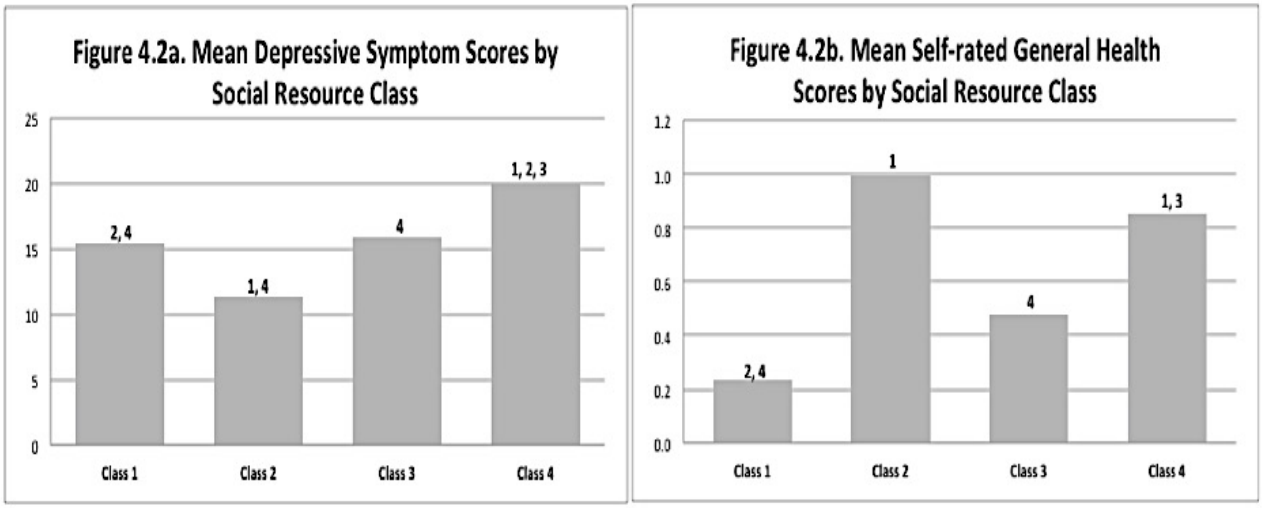
Figure 4.2a presents results from the multivariate linear regression models and visually depicts the mean depressive symptom scores across each social resource class. Controlling for gender, marital status, SES, country of birth and years in the U.S., age, pain frequency, and activity limitation intensity, those in Class 2 had the fewest depressive symptoms ($M = 11.31$), followed by Class 1 ($M = 15.39$), Class 3 ($M = 15.83$), and Class 4 ($M = 19.92$). Members of Class 4 had significantly more depressive symptoms than those in Class 1 ($p < 0.001$), Class 2 ($p < 0.001$), and Class 3 ($p < 0.001$).

Figure 4.2b presents the mean self-rated general health scores across each social resource class, controlling for gender, marital status, SES, country of birth and years in the U.S., age, pain frequency, and activity limitation intensity. Those in Class 1 had the best self-ratings of general health ($M = 0.23$), followed by Class 3 ($M = 0.38$), Class 4 ($M = 0.85$), and Class 2 ($M = 0.99$). On average, those in Class 1 had significantly better self-ratings of general health than those in Class 2 ($p = 0.001$) and Class 4 ($p < 0.001$).

Overall, results from the multivariate linear regressions suggest that, relative to other classes, those in Class 1 and Class 3 fared well on both health outcomes (good self-rated general health and few depressive symptoms). Class 1 and Class 3 were also characterized by having the most positive social resources available to them. Those in Class 2 had a unique combination of health outcomes, such that they experienced the fewest depressive symptoms but also had the poorest self-rating of general health. Members of Class 4 ranked poorly for both the depressive symptom and self-rated general health outcomes and also had the poorest combination of social resources. Overall, findings suggest that members belonging to resource classes with more

positive resources fared better on both health outcomes, while members belonging to resource classes characterized by poor social resources fared poorly on both health outcomes.

Figure 4.2. Mean Depressive Symptom Scores and Self-Rated General Health Scores across Social Resource Classes



Note. Figure 4.2 depicts the mean depressive symptoms and self-rated health scores after controlling for the following sociodemographic characteristics: gender, marital status, SES, country of birth, years in the United States, age, pain frequency, and activity limitation intensity. On average, those in Class 2 had the fewest depressive symptoms, followed by Class 1, Class 3, and Class 4. On average, those in Class 1 had the best self-rated general health, followed by Class 3, Class 4, and Class 2. The numeric denotation (1) above each column indicates that the corresponding class significantly differs from Class 1 on the health outcome. The denotations 2, 3, and 4 follow the same logic, with all levels of significance at $p < 0.005$.

DISCUSSION

A large body of coping research has documented the role of individual forms of social resources on health. However, much less is known about the profiles of social resources and their relationship with health outcomes. Despite the theoretical and empirical evidence underscoring the importance of social resource typologies for health, [182] the research is scant, particularly among Latinos. An emerging body of coping research among non-Latinos has recently begun identifying social resource typologies and evaluating the role of distinct social resource typologies on health.[182,183,195] Prior research has documented distinct patterns in social resources

by country through the use of cross-national samples,[196] by age group,[182,194] and by social status (e.g. high socioeconomic status).[182] The documented evidence for culture-bound variations in social resource typologies provides strong grounds for investigating social resource typologies among Latinos. As such, the purpose of this study was three-fold: identify social resource profiles among a sample of Latino adults; examine the social and health correlates associated with each social resource profile; and evaluate two indicators of well-being (e.g. depressive symptoms and self-rated general health) across each social resource profile. Several notable results were obtained.

Social Resource Profiles

Employing latent class analysis, a person-centered approach, revealed four distinct social resource profiles among this sample of primarily older Latino adults. The four social resource profiles were characterized in the following way: high positive social resources (Class 1), frequent, yet negative, family relations (Class 2), positive family resources and high medical mistrust (Class 3), and frequent, yet negative, family relations and high medical mistrust (Class 4). In the resource profile and resource typology literature, four network subgroups have been commonly documented: diverse, friend-focused, family-focused, and restricted.[182,183,194,196]

Overall, two social resource profiles identified in this study were similar to those found in prior resource typology studies. In particular, results from the present study suggest that Class 1 members are characterized by having high positive family and friend social resources, whereas Class 3 members are characterized by having high levels of positive family resources only. Arguably, these results are similar to prior research among non-Latinos, which have documented a “diverse network” and a “family network” as two social resource typologies.[182,183]

However, results from this study are unique in several ways. First, each social resource class identified in the present study is characterized by frequent family interactions. No prior studies have identified social resource profiles among Latinos; however, results from this study are distinct from prior social resource typologies studies among non-Latinos. Prior social resource typologies observed among non-Latino populations in the United States[182] and other countries have typically observed one or two family-oriented latent classes.[183,196] As such, findings from this stem are distinct from prior research. The frequent family interactions observed across all classes may stem from the population studied: Latinos. For instance, prior research has documented the centrality of family among Latinos.[168,172,178] As such, observing frequent family interaction across all resource classes may differ from prior research among non-Latinos, but is generally consistent with prior research on the centrality of family among Latinos.

Interestingly, indicators of positive family resources tended to come in clusters, such that classes high on one indicator of positive family relations (e.g. positive family support) were also high on the other indicator of positive family relations (e.g. family pride). Also, classes characterized by positive family relations were low on negative family relations (i.e. negative family support). Taken together, these patterns indicate that positive family relations tend to cluster together, while negative family relations tend to cluster together, which suggests that classes characterized by negative family relations have a heighted risk for the adverse health outcomes linked with strained family relationships.[198] In particular, two classes were characterized by positive family resources (e.g. positive family support and family pride), and two classes were characterized by negative family relations (i.e. negative family support). Overall, findings suggest that, more so than the frequency of interactions with family, the quality of interactions (positive or negative) form meaningful distinctions between social resource

profiles. Prior research aimed at identifying social resource typologies has considered positive support (e.g. instrumental and emotional support)[195] from family only or has examined the structural and functional social relations[196] with family. To date, only one social resource typology study has considered negative social relations by incorporating two items (whether individual in social network gets on participants' nerves and makes too many demands on participant) in the cluster analysis.[194] Given that family relations can be both beneficial and harmful to health, empirically measuring negative family support was able to shed a more nuanced understanding of the complex patterns of family dynamics among Latinos.

Second, medical mistrust was high among members of Class 1 and Class 4, which, in combination, comprise 37% of the full sample. These results highlight the prevalence of medical mistrust among Latino subgroups. A large body of research has documented medical mistrust as a barrier in chronic disease management among Latinos,[27,187] yet prior research on social resource typologies has not considered the role of relationships with healthcare providers or treatment. Given that Latinos experience various challenges across the life course, such as high levels of stress exposure and chronic health conditions, successfully coping with and managing these hardships necessitates strong relationships with personal networks (e.g. family and friends) and with healthcare teams. As such, identifying profiles characterized by high medical mistrust is an important step to mitigating this barrier to chronic disease management.

Third, the probability of endorsing loneliness was low among all four resource classes. Although prior research on social resource typologies had not directly assessed loneliness, the study of loneliness has gained much more attention in recent years for its role as a risk factor for several health problems (e.g. depression). [205] Results from this study indicate that loneliness is low among this sample of Latinos. Prior research on social resource typologies has identified

several subgroups of isolated or restricted social networks (e.g. restricted/unsupported, low exchange, restricted-nonfamily unsupported, and restricted non-friends unsatisfied).[182,183,194,195] Although results from this study indicate loneliness was low and family interactions were high across all resource classes, assessing loneliness is a contribution to the study of social resource profiles. Specifically, two of the resource classes had low levels of positive family and friend resources. Interestingly, these same classes also had low levels of loneliness. These patterns suggest that reporting low levels of loneliness should not be interpreted as having high social resources. These findings underscore the value of measuring indicators of social connectivity, while also measuring individuals' own perceptions of loneliness.

Patterns in the Distribution of Social Resources

Overall, results indicate that the distribution of stress exposure, health comorbidities, church networks, and sociodemographic characteristics varied significantly across the social resources classes. Among these results, three major findings stood out. First, medical mistrust was high among classes comprised primarily of foreign-born non-Cuban Latinos. In particular, members of Class 3 and Class 4 were likely to endorse high medical mistrust. Members of Class 3 and Class 4 also comprised the largest proportions (nearly 50%) of foreign-born non-Cuban Latinos. Due to distinct sociopolitical contexts, Cubans in the U.S. differ from non-Cuban Latinos in many ways, such as immigration experiences, educational attainment, and income.[206] For instance, Cuban migration circumstances arise from the fleeing of a communist government. As a result, the U.S. government set policies in place to grant refugee status to Cubans.[200] Under these circumstances, the pathways to citizenship is vastly distinct between Cuban and non-Cuban Latinos. Recent estimates suggest that 58% of foreign-born Cubans[207] become U.S. citizens,

compared with 31% of foreign-born Mexicans.[208] These variations may partially explain the high levels of medical mistrust among foreign-born non-Cuban Latinos.

Second, results from this study support prior research documenting fewer resources among socially disadvantaged groups, as findings indicate that classes with the highest levels of positive social resources were socially advantaged. For instance, members of Class 1 were likely to have high levels of all positive social resources and were also financially advantaged, such that they comprised the largest proportion (41%) who belonged to the high socioeconomic strata. In addition to having the highest presence of family and friend resources, members of Class 1 also had the strongest church-based networks, relative to other classes. In particular, 59% belonged to a church and 29% attended church nearly every week or more. In combination, these patterns suggest members of Class 1 were financially advantaged and had high levels of family, friend, and faith-based resources. Conversely, members of Class 4 were economically and socially disadvantaged and had the fewest social resources. Members of Class 4, relative to other classes, fared worse on several indicators of financial advantage. For instance, members of Class 4 comprised the largest proportion belonging to the low socioeconomic strata (53%), with no health insurance (41%), and who reported it was very difficult (26%) to meet medical expenses. Members of Class 4 also comprised the largest proportion of foreign-born individuals (98%). Overall, members of Class 4 had a low likelihood of endorsing positive social resources, yet had a high likelihood of endorsing negative social resources, such as negative family support and medical mistrust. Taken together, these findings support prior research that documents that socially advantaged groups as having more resources available to them.[34,97,182] In particular, prior research on social resource typologies suggests that members of the diverse network had significantly higher income than those in all other clusters.[194] Findings from this study are

consistent with those results. Findings from this study extend prior research by further documenting how socially disadvantaged groups have fewer positive family and friend resources and higher levels of medical mistrust.

Social Resources, Depressive Symptoms, and Self-rated General Health

Findings from this study suggest that, controlling for demographic characteristics, pain frequency, and activity limitation intensity, classes with high levels of positive social resources (i.e. Class 2 and Class 4) have depressive symptom scores that are below the traditional cutoff score for significant depressive symptomatology of 16 for the CES-D.[149,150,182] Classes with higher positive social resources also fared well on self-rated general health. Conversely, results suggest that classes with the fewest social resources, such as Class 4, have depressive symptoms scores that are above the traditional cutoff score for significant depressive symptomatology. Those in classes with the fewest social resources (i.e. Class 4) also have significantly worse self-rated general health than those with high positive social resources (i.e. Class 1 and Class 3).

Only a few studies in the U.S. and globally have identified social resource typologies and related them to health. Based on these studies, there is evidence that those with more diverse social networks have higher morale[183] and fewer depressive symptoms.[182] Members of diverse and supported resource groups have fewer depressive symptoms, higher subjective well-being, and higher life satisfaction than members of restricted resources groups.[183,194] Fiori and colleagues (2008) examined profiles of social networks among older adults in the U.S. and Japan.[196] The social clusters identified were broadly similar across each country. Among participants in the U.S., fewer depressive symptoms and lower morbidity were identified among diverse social types, whereas more depressive symptoms and higher morbidity was identified among restricted social resource groups. Interestingly, among participants in Japan, depressive

symptoms and morbidity did not vary by network group.[196] Findings from the present study support patterns among American, Israeli, and German samples, such that more positive social resources are linked with better health outcomes and fewer social resources are linked with worse health outcomes.

Although findings from this study are generally consistent with prior research, the health outcomes for one social resource class are inconsistent with prior research. In particular, members of Class 2 had few social resources, such that they were likely to endorse only two social resource indicators: frequent family interactions and negative family support. These findings suggest that members of Class 2 have frequent, yet negative, family relations. Based on prior research, it would be hypothesized that members of this group would fare poorly on indicators of well-being. However, members of Class 2 had the worst self-rated general health, yet the fewest depressive symptoms, relative to other social resource classes. The discordant mental health and global health outcomes among Class 2 members suggest social resource combinations may differentially shape distinct dimensions of well-being.

Limitations

Findings from this study should be considered in light of several limitations. First, data for this study come from a regional sample of community-dwelling Miami-Dade County residents, which limits generalizing the findings to Latinos in the United States. Nonetheless, this is the first study to explore social resource typologies among Latinos in the United States. As such, this study is an important first step to understanding the distribution of social resources among Latinos and their associations with well-being. Second, this study uses cross-sectional data, which limits any claims on the causal pathways between social risks, social resources, and well-being. This study relies primarily on a correlational approach, as do other studies that have

employed cluster analysis or latent class analysis to identify social resource typologies.[182,183,195] Future research should consider the use of longitudinal data to identify the causal relationships between social risks, social resources, and well-being and to document the stability or changes in class membership over time. Third, self-ratings of general health were conducted using validated scales. However, interviews were conducted in English or Spanish, depending on the participants' language preference. Prior research has documented how language of interview may differentially influence self-rated general health responses.[55,147] For instance, several factors such as translations of the self-rated health items and numbers of years of schooling, contribute to differences in why Latinos report poorer self-rated health than non-Hispanic Whites.[55] Fourth, data from this study were collected over a decade ago. Prior research on psychosocial resources suggests psychosocial resources are relatively stable. However, recent research has documented a spike in mental health problems among Latinos due to immigration policies, heightened deportations and racialized policing.[209–211] As such, findings from this study may underestimate mental health problems experienced by Latinos presently. The current immigration policies point to the need to collect timely data on several indicators of social risks (e.g. stressors, health comorbidities), psychosocial resources, and well-being among minority populations.

Implications for Theory and Practice

Results from this study have several theoretical and practical implications for coping processes, with a particular focus on social resources and well-being among Latinos.

This study integrated the stress process model within the life course framework to examine social resources and health among Latinos, with the purpose of illuminating the distinct social resources Latinos draws on and the implications for well-being. Findings from this study underscore the value of several life course and stress process concepts for coping research. First,

results underscore the importance of *social characteristics* and *social pathways* for identifying social patterning in social resource typologies, particularly for advantaged and disadvantaged groups. The consistent positive associations between social resources and well-being highlight the distinct *social pathways* to health. Second, results bring to the center the principle of *linked lives* by documenting how those with higher levels of positive social connections generally have better well-being, relative to under-resourced groups. Third, results from this study underscore the value of *social resource typologies* as a promising line of inquiry. For the most part, research on social resources explores isolated social resources. This study documents the value of examining social resources in their naturally occurring complex state. Given the natural complexity of social resources, there is a growing interest in applying person-centered approaches, such as cluster analysis and latent class analysis, to identify patterns in social resources. The limited research in this area has documented distinct and culture-bound social resource typologies. This line of inquiry would benefit from identifying social resource typologies across distinct populations. Given that paucity of research in this area among Latinos, future research should evaluate social resource typologies for Latino subgroups to better understand patterns among Latino subgroups and better tailor intervention efforts.

Overall, this study contributes to the social resource knowledge base by being the first study to apply a person-centered approach to the study of social resource typologies among Latinos in the U.S. This applied a person-centered approach to identify profiles of social resources among Latinos and to evaluate the relationship between social resource profiles and well-being. This study contributes to the small, but growing, evidence documenting the theoretical and practical significance of social resource typologies for health.[182,183,194–196] Prior research aimed at identifying social resource or social network typologies has used data comprised of older adults

in Europe,[194] Israel,[183] and Japan.[196] Studies in the U.S. have exclusively examined social resources typologies among aging non-Latino populations.[182,195,196] Findings from this study extend the social resource typology literature by examining patterns in social resource typologies unique to Latinos. In particular, this was the first study among social resource typology studies to consider positive and negative social resources using validated scales, to consider the role of medical mistrust, and to directly consider loneliness in the person-centered analysis. The nuanced results underscore the value of measuring several and distinct domains of family relationships and the value of considering unique challenges in health promotion among Latinos, such as medical mistrust.

Several findings may inform public health practitioners and health promotion efforts. First, the finding that the quality (i.e. positive or negative) of family relationships, rather than the frequency of communication with family, was most important for well-being suggests that frequent family interactions should not be interpreted as strong family support. Second, over one-third of the sample was likely to experience high levels of medical mistrust. In particular, medical mistrust was high among classes primarily comprised of among foreign-born non-Cuban Latinos. This finding highlights the heterogeneity within subgroups of Latinos. In particular, observing high levels of medical mistrust among primarily non-Cuban Latinos emphasizes the need for clinical providers and researchers to consider the ways that sociopolitical context shapes medical mistrust in particular, and barriers to disease management in general. As other scholars have noted, the overall U.S. health care system should consider country of origin differences among Latinos. [145] Furthermore, efforts to minimize medical mistrust should consider the sociopolitical contexts that contribute to medical mistrust and should work with community stakeholders to collectively address these issues.[145] Third, although the likelihood of loneliness

was low across all four social resource classes, it is important to note that data were collected in Florida. Historically, Latino populations have been concentrated in Florida, California, Texas, and New York.[212] Recently, researchers have investigated isolation among Latinos in new-growth communities, as aging Latinos resettle in the Midwest and Northeast.[213] These trends point to the need for continued surveillance of social isolation and loneliness among geographically and culturally diverse Latinos. Policy makers and future research should consider new-growth communities of Latino in southern states and the implications that resettlement will have on social resources and, subsequently, health and well-being among Latinos.

Finally, results document that socially disadvantaged groups are vulnerable to having few positive social resources available to them. As other scholars have noted, the empirically and practically distinct social resource typologies and their consistent relationship with health highlight the need to tailor health promotion efforts to individuals' social resource needs rather than treating Latinos as having the same needs.[194] Given that disease self-management, coping with diverse social and health stress, and aging successfully are complex processes, those from socially disadvantaged groups are under-resources, and thus vulnerable—to heightened health promotion challenges.

CHAPTER 5
STUDY 3: PROFILES OF HEALTH BEHAVIORS AMONG LATINOS: IMPLICATIONS FOR DEPRESSIVE SYMPTOMS AND SELF-RATED GENERAL HEALTH

Introduction

Latinos comprise the largest minority group in the United States[153] and are an aging population. Among Latinos living in the United States, the proportion of those ages 65 and older is projected to increase from 8% in 2016 to 21% by 2060.[2] This aging population faces numerous health conditions that are exacerbated by challenges to chronic disease management, such as underutilization of medical services, medical mistrust, and uninsured or underinsured status.[45,185] For instance, relative to non-Hispanic Whites, Latinos fare worse on several indicators of well-being, such as depressive symptoms[115,154] and self-rated health.[7] Prior research has highlighted numerous social, comorbidity, and stress-related risk factors associated with adverse health outcomes among Latinos.[10–12,27,214] The high burden of risks and health challenges coalesce to undermine Latinos' well-being.

Over the past few decades, coping has gained attention for its role in improving health outcomes and for its intervention potential.[23] Changing health behaviors are one of the many ways individuals cope with stressors[215] and health behaviors, such as dietary patterns, physical activity, and substance abuse, are important determinants of health.[216] A basic tenet of the stress process model is that stress evokes physical and psychological arousal.[217] Individuals engage in behaviors, such as alcohol consumption, smoking, eating, or exercising in an effort to reduce distress levels.[77] However, whether individuals engage in adaptive or maladaptive health behaviors to cope with stressors can shape health trajectories over time.[77] Consistently engaging in maladaptive behaviors can undermine well-being over the life course and exacerbate health problems.

Investigating health behavior patterning among aging Latinos is critical, given the role of behavioral risk factors for morbidity across the life course.[218] Health behaviors are part of the coping process, as individuals engage in a range of health behaviors to cope with distinct stressors across the lifecourse. Understanding patterns in the health behaviors that Latinos engage in, and under what context, can inform tailored intervention efforts among this population. Consequently, this study applies the life course framework[56,120,121] and stress process model[43,79,93] to the study of health behavior patterning. The purpose of this study is to identify profiles of health behaviors among Latinos and to evaluate the implications of health behavior patterns on well-being. To better promote positive coping among Latino adults, it is critical to examine complex lifestyle patterning in their natural state rather than exclusively assessing isolated health behaviors.

Background

Relative to non-Hispanic Whites, Latinos fare worse on several indicators of well-being, such as depression and self-rated health.[7,154] National estimates suggest that Latinos experience higher depression chronicity than non-Hispanic Whites,[115,154] with 26% of Latino adults experiencing mild, moderate, or severe depression.[154] In addition to the high burden of depression Latinos face, Latinos also experience higher somatization of psychiatric conditions (e.g. depression, anxiety) than non-Hispanic Whites.[157] Latinos also face underestimates and under treatment of depression partly as a result of lack of health insurance or being underinsured.[45] Depression has serious implications for adverse health outcomes and for exacerbating health problems, including being associated with higher risks of heart disease, stroke, digestive problems, suicidal ideation, and all-cause mortality.[44,47–49,115] Of all adults with moderate or severe depression, 80% report experiencing difficulty with social, work, and home activities because of their depression.[46]

Untreated or mistreated depression is linked with suicidal and homicidal ideations.[50] Given that the prevalence of depression is under-diagnosed and under treated among racial and ethnic minorities and economically disadvantaged populations,[45] this study will assess depressive symptoms among Latinos. Evaluating depressive symptoms, rather than medically diagnosed depression, may minimize the risk of misclassification[41] (over-estimating well-being) among this population and may better assess distress.

Assessing self-rated health can provide additional insights into the ways stress exposure and pre-existing health conditions shape Latinos' overall quality of life. Self-rated health is widely used to assess general health status in population studies and has a high overall predictive validity for mortality among diverse populations.[161,162] Relative to non-Hispanic Whites, Latinos fare worse on self-ratings of health, and these disparities worsen over time.[7] The poorer self-ratings of health among Latinos suggest a health disadvantage for Latinos' overall well-being. A large proportion of aging Latinos suffer from multiple chronic conditions and diverse other forms of stressors. Capturing a global measure of health can be informative of the ways these diverse risk factors are broadly shape Latinos' overall well-being. Consequently, this study will assess patterns across two indicators of well-being (depressive symptoms and self-ratings of health) to better capture Latinos' overall well-being.

Theoretical Framework: An Integrated Life Course and Stress Process Model Approach

Prior research has emphasized a natural synergy of stress and life course perspectives to examine the role of stress exposure on health over the life course.[77,104] Numerous scholars have emphasized intentional health behaviors as one of the many ways individuals cope with stress and other life challenges.[99,215] Most often, the stress process model has been applied to personal resources and social resources to study how differential psychosocial coping resources shape

health trajectories. More recently, Umberson and colleagues presented an integrated stress and life course perspective for the study of health behaviors.[77] A basic tenet of the stress process model is that stress evokes physical and psychological arousal.[217] Individuals may engage in distinct health behaviors to reduce levels of distress[77] and consistently engaging in adaptive, or maladaptive, health behaviors can shape trajectories of health over the life course.[77] Consequently, this study integrates the stress process model[78,79,93,94] within the life course framework[56,120,121] and applies these theoretical orientations to (a) identify profiles of health behaviors that Latinos draw on to cope with various stress and health challenges and (b) evaluate the health implications of these health behavior patterns.

This study applies several life course principles: the principle of *social pathways* to recognize that health behaviors are socially patterned; *linked lives* to consider coping as a complex pattern that is shaped by relationships with others; and *human agency* to recognize that individuals have agency to cope in unique ways. These distinct coping styles, in turn, have distinct implications for the broader coping process. This study examines *health behaviors* patterns linked with distinct *social characteristics* and distinct domains of *stress exposure* to assess global and mental health outcomes. Ultimately, integrating the life course framework within the stress process model provides a lens by which to examine how Latinos develop health behavior patterns and to evaluate their linkages with two indicators of well-being (depressive symptoms and self-rated general health).

Health Behaviors and Well-Being

A large body of literature has examined various mechanisms that shape Latinos' health. Prior research has recognized coping for its role in reducing the adverse health risks of stressors and for its intervention potential.[23] Coping is defined as conscious, deliberate, action-oriented efforts

to control, adapt, and manage the demands created by stressful events that are appraised as being taxing.[20,23] Health behaviors are one of the many ways individuals cope with stressors.[215] For instance, when faced with stressors, individuals can engage in a series of behaviors to reduce stress and feelings of distress. However, the types of behaviors individuals engage in to cope with stressors can work to promote health (e.g. physical activity) or undermine health (e.g. smoking). For example, prior research suggests that individuals may use alcohol consumption as a way of coping with financial strain.[215] Consistently engaging in maladaptive health behaviors can undermine well-being or exacerbate health problems. As such, assessing patterns in health behaviors is an important aspect of coping and can inform culturally-tailored intervention efforts among Latinos.

Health behaviors refer to a range of personal actions that shape (promote or undermine) health, morbidity, and mortality.[219] Individuals may draw on health behaviors to cope with the psychological arousal (e.g. depression) brought on by stressful events, in an effort to reduce that arousal.[77,217]

Health behaviors shape health outcomes. In particular, prior research has underscored the importance of physical activity, alcohol consumption, smoking, and routine checkups for their role in promoting or undermining health. For instance health behaviors, such as physical activity, have gained widespread attention for their role in promoting health. A review of cross-sectional and longitudinal studies and randomized clinical trials suggests that those engaging in regular physical activity fare better on several health outcomes than those who are physically inactive.[220] Even when adjusting for potential confounders, such as socioeconomic status, gender, or alcohol consumption, studies have consistently documented that physical activity can exert positive mental health benefits.[220] Routine checkups are an additional health behavior linked with

positive health outcomes. For example, routine checkups aid in disease prevention (primary prevention), in early detection of health conditions (secondary prevention) and aid in management of health conditions and improving quality of life among those affected by health problems, such as diabetes (tertiary prevention).[221] Smoking and alcohol consumption are health behaviors implicated with adverse health outcomes. For instance, the evidence linking smoking to numerous health consequences (e.g. lung cancer, premature morbidity) has been well documented for several decades.[222] Prior research has also documented the adverse health outcomes associated with alcohol consumption. For instance, excessive alcohol consumption is linked with premature death and is responsible for 1 in 10 deaths among adults ages 20 -64 years.[223]

Moreover, Latinos experience several risk factors that increase their risk for engaging in health behaviors that undermine health. Several risk factors (e.g. disability, medical mistrust, and stress exposure) for poor health behaviors have been documented among Latinos. First, Latinos with disabilities experience greater activity limitation severity than non-Hispanic Whites.[224] Latinos report coping with disability and chronic pain by reducing physical activity.[27] Second, routine checkups are critical for health promotion and early detection of health conditions. However, medical mistrust is high among some Latino subgroups.[187] Medical mistrust is linked with underutilization of health care services[185] and lower satisfaction with health care services.[187–189] Medical mistrust interacts with other documented determinants of medical checkups (e.g. underinsured, uninsured)[225] to reduce Latinos' use of health services, including routine checkups. Relative to Non-Hispanic Whites and Black Americans, the relationship between discrimination and smoking patterns was stronger among Latinos.[226] Overall, these

patterns suggest that Latinos face several risk factors that may undermine their engagement in health promoting behaviors.

Gaps in the Relationship Between Health Behavior Patterns and Well-Being among Latinos

A large body of literature has examined the role of health behaviors on overall health and well-being. Still, several gaps remain. First, the role of health behaviors within the context of the stress process model has been largely overlooked.[77] Scholars have underscored health behaviors as being beneficial or detrimental to individuals' health[219] and have documented the ways in which stressors shape health behaviors.[219] However, those drawing from the stress process model have largely focused on psychosocial mechanisms (e.g. personal resources, social resources) underlying the relationship between status groups, stressors, and health outcomes. Although there has been an explicit call for employing an integrated stress and life course perspective for the study of health behaviors,[77] limited empirical research has been conducted in this area.[227,228]

Second, an emerging body of research is using person-centered approaches, such as latent class analysis, to evaluate the combined synergistic effect of health behaviors on overall health and quality of life. However, Latino-specific studies assessing health behaviors have focused on isolated health behaviors and have yet to assess health behavior patterning (clusters, profiles, typologies, subgroups). Evaluating single forms of health behaviors obscures the complexity of health behaviors and does not consider how individuals engage in a range of both healthy and unhealthy behavioral patterns. Overall, this gap in the literature obscures the complex lifestyle and health behavior patterning among Latino adults, which minimizes the theoretical understanding of health behavior patterning and undermines intervention strategies relevant to identifying high-risk groups among this population.

Third, although a large body of research has documented the role of social resources for individual forms of health behaviors, less is known about the role of social resources for shaping health behavior profiles.[219,229] Among the few health behavior profiles studies that have been conducted, social resources (e.g. family support) have been linked with favorable diabetes management strategies.[230] However, less is known about the ways distinct social resources shape health behavior profiles among Latinos. Identifying which social resources can promote a combination of health-promoting health behaviors can inform culturally-tailored intervention efforts.

Fourth, among the limited studies that have employed person-centered approaches, such as latent class analysis, to identify profiles of health behaviors, few have assessed health outcomes associated with health behavior profiles. The majority of the studies identify profiles of health behaviors and identify social characteristics (e.g. social advantage, personal resources) associated with latent class membership.[230–232] Only a limited number of studies have assessed the relationship between health behavior classes and health outcomes. Of the studies that have examined linkages between health behavior classes and health outcomes, single health outcomes have been assessed independently, such as substance abuse,[233] self-rated health,[218] and all-cause mortality.[234] Assessing only one health outcome at a time raises the issue of misclassification bias, which can lead to the overestimation of health and well-being.[41] As such, using an indicator of mental health and global health can provide insight into the overall well-being among Latinos.

Purpose of the Study

Given the role of health behaviors for well-being, the present study examines patterns across four health behaviors: physical activity, routine checkups, smoking, and alcohol consumption. The aims of this study are three-fold: (1) identify profiles of health behaviors (physical activity,

routine checkups, smoking, alcohol consumption) among Latinos; (2) determine the social and physical health correlates associated with each health behavior profile; and (3) assess well-being (depressive symptoms and self-rated general health) across health behavior profiles. Assessing health behavior patterning among Latinos can shed light on the distribution of multiple health behavior typologies across social groups and can determine well-being across health behavior subgroups.

Methods

Study Design and Sample

This study uses data from the "Disabilities" dataset, a community-based study of community-dwelling Miami-Dade County adults. This dataset includes extensive measures on psychosocial resources, health behaviors, and physical and mental health outcomes among a sample of racially and ethnically diverse male and female adults. Wave 1 interviews were conducted between the years 2000 to 2001 (n = 2,000). One thousand individuals were screened as having activity limitations and 1,000 individuals with no activity limitations were matched on age, gender, and race and ethnicity.[108] Wave 2 interviews were conducted between the years of 2003 to 2004 (n = 1,600). Wave 2 was comprised of a representative subsample of 1,600 Wave 1 participants. Half of Wave 2 participants (n = 800) had a disability and half (n = 800) did not. All interviews were computer assisted and administered in participants' preferred language (English or Spanish).[108] Interviewers obtained informed consent prior to commencing each interview. Additional details on the Disabilities dataset have been described elsewhere.[108]

The Disabilities dataset consists of a representative sample of the Miami-Dade County population. Participants were sampled so as to achieve equal representation (25% each) of Cuban, Non-Cuban Latino, Black, and non-Hispanic White racial and ethnic groups.[108] The

focus of the study was on physical limitations. Individuals were excluded from the study if their limitations stemmed from social, psychological, or cognitive causes or if they had Alzheimer's disease or dementia, or visual, auditory, or speaking impairments.[108] To examine patterns of coping resources among Latinos, data for this study are restricted to Latinos only (n = 609). Half of the sample was born in Cuba (48%), followed by the United States (11%), Colombia (9%), Puerto Rico (6%), Nicaragua (4%), Dominican Republic (4%), Guatemala (1%), El Salvador (1%), and Mexico (1%). About 15% of the sample was born in a Latin American country outside of those listed here.

Measures

Health Outcomes

Depressive Symptoms. Depressive symptoms were measured using the 20-item Center for Epidemiologic Studies Depression (CES-D) scale ($\alpha = 0.879$), which asks questions related to depressed mood, appetite loss, sleep disturbance, and feelings of guilt and worthlessness in the last month.[123] Response options were (0) Not at all, (1) Occasionally, (2) Frequently, and (3) Almost all the time. Positive items were reverse coded. The possible range of scores is 0 - 60, with higher scores indicating more depressive symptoms.

Self-rated General Health. Self-rated general health was measured using a four-item scale from the RAND 36-Item Health Survey, General Health Subscale.[124,125] Participants were asked (a) "You seem to get sick a little easier than other people (reverse coded); (b) "You are as healthy as anybody you know"; (c) "You expect your health to get worse (reverse coded)"; and (d) "In general, your health is excellent".[51] Response options were (0) Definitely true, (1) Mostly true, (2) Don't know, (3) Mostly false, and (4) Definitely false. Two items were reverse coded.

Scores were summed and averaged. The possible range of scores is 0 – 4, with higher scores indicating worse self-rated general health.

Health Behaviors

Physical Activity. Physical activity was measured using federal guidelines from the U.S. Department of Health and Human Services, which state that individuals who engage in at least 150 minutes of moderate activity or 75 minutes of vigorous activity per week are "physically active," whereas those individuals who engage in fewer than 75 minutes of vigorous activity in a week are "physically inactive."[204] Physical activity was dichotomized as (0) Inactive and (1) Active. For the purpose of the LCA, the variables remained dichotomized (1 = Inactive, 2 = Active).

Routine Checkup. To assess whether participants had obtained a routine checkup in the past 12 months, participants were asked: "In any of your visits to a healthcare provider in the past 12 months, did you get a routine checkup?" Response options were (0) No and (1) Yes. For the purpose of the LCA, the variables remained dichotomized (1 = No routine checkup, 2 = Routine checkup).

Alcohol. To measure alcohol consumption behavior, participants were asked if they had ever consumed "alcoholic beverages, including beer, wine, wine coolers, and hard liquor like vodka, gin or whiskey." Response options were dichotomized (0 = No, 1 = Yes). For the purpose of the LCA, the variables remained dichotomized (1 = Non-drinker, 2 = Drinker).

Smoking. To measure smoking behavior, participants were asked, "Are you a current smoker, ex-smoker, or have you never been a smoker?" Responses were (0) Never, (1) Current, and (2) Ex-smoker. For the purpose of the LCA, responses were recoded as (1) Non-smoker (Never, Ex-smoker), (2) Smoker (Current).

Social Resources

Positive Family Support. Positive family support was measured using an eight-item (α = 0.881) version of the Provisions of Social Relations scale.[197,198] The scale includes statements, such as "Your family often lets you know that they think you are a worthwhile person." Response options were (0) Not at all true, (1) Somewhat true, (2) Moderately true, and (3) Very true. The possible range of scores is 0 – 24. Higher scores indicate a higher presence of positive family support.

Family Pride. Family pride was measured using a six-item family pride scale (α = 0.921). The scale was adapted from the work of Olson and colleagues[199] and has been shown to be reliable among diverse Latino subgroups in various contexts.[200–203] Participants were provided with statements, such as "You share similar values and beliefs as a family" and "You are proud of your family." Response options were (0) Strongly disagree, (1) Disagree, (2) Agree, and (3) Strongly agree. The possible range of scores is 0 to 18, with higher scores indicating a higher presence of family pride.

Friend Social Support. Friend social support was measured using an eight-item (α = 0.955) modified and shortened version of the Provisions of Social Relations scale.[197] Participants were provided with eight statements, such as "You have friends who would always take the time to talk over your problems, should you want to." Response options were (0) Not at all true, (1) Somewhat true, (2) Moderately true, and (3) Very true. The possible range of scores is 0 – 32, with higher scores indicating higher levels of social support from friends.

Family Negative Support was assessed using an eight-item (α = 0.830) modified and shortened version of the Provisions of Social Relations scale.[197] Participants were provided with statements, such as "Your family is always telling you what to do and how to act" and "Your

family is often critical of you." Response options were (0) Not at all true, (1) Somewhat true, (2) Moderately true, and (3) Very true. The possible range of scores is 0 - 24, with higher scores indicating a higher presence of family negative support.

Medical Mistrust was measured using a three-item scale ($\alpha = 0.902$). Participants were asked how they feel about the people who provide their medical treatment and about the treatment itself. Example statements were, "I worry that my doctor does not tell me the full range of options for my treatment" and "I worry that my doctor will put cost considerations above the care I need." Response options were (0) Strongly disagree, (1) Mildly disagree, (2) Neither agree nor disagree (3) Mildly agree, and (4) Strongly agree. Scores were summed, with the possible range of scores being 0 – 12. Higher scores indicate a higher presence of medical mistrust.

Loneliness was assessed using three items ($\alpha = 0.658$), such as "During the past few months, about how often have you felt lonely?" and "During the past few months, when you felt lonely, how lonely did you feel?" Items were summed with the possible range of scores being 0 - 9. Higher scores indicate higher levels of loneliness.

Stress Exposure

Seven domains of stress exposure were assessed: chronic stress, recent life events, major life events (trauma), daily discrimination, major discrimination, neighborhood stress, and total stress.

Chronic Stress. Chronic stress was measured using Wheaton's (1994) scale.[130] The scale was adapted to better capture stressors middle-aged and older adults are likely to face.[71] Chronic stress was assessed using 36 items relating to general experiences, relationships, and general strain. Example items include, "There is too much pressure put on you to be like other people." Participants were asked the extent to which each item is true. Responses were coded as (0) Not

true, (1) Somewhat true, and (2) Very true. Responses to all variables were summed. The range of possible scores was between 0 - 72, with higher scores indicating higher levels of chronic stress.

Recent Life Events. Recent life events were measured with a 32-item index that asked participants if they had experienced a range of serious accidents, deaths, or financial crises in the past 12 months.[71] Example items include, "Did someone have a major financial crisis?" Responses to all 32 dichotomous (0 = No, 1 = Yes) items were summed, with the possible range of scores being 0 - 32.

Major Life Events (Trauma). Trauma was assessed using 44 items that asked respondents whether they had experienced major life events—or trauma—in one's lifetime (0 = No, 1 = Yes). An example item includes, "Did your father or mother not have a job for a long time when they wanted to be working?" Response options were summed, with the range of possible scores being 0 - 44.

Major and Everyday Discrimination. Major discrimination and daily discrimination were assessed using the Major Discrimination Scale.[131] Major discrimination was assessed using seven items. Participants were asked if they had ever faced discriminatory events related to employment, education, or housing (0 = No, 1 = Yes). Example items include, "Have you ever been unfairly treated by the police (e.g. stopped, searched, questioned, physically threatened, or abused)?" The possible range of scores was zero to seven. Everyday or daily discrimination was measured using nine items ($\alpha = 0.864$) that include statements, such as "You are treated with less courtesy than other people." Response categories were (0) Never, (1) Rarely, (2) Sometimes, (3) Often, and (4) Almost always. Response options were summed, with the possible range of scores being 0 - 36.

Neighborhood Stressors: Fear of Crime. Neighborhood stressors were measured using 10 items regarding the extent to which individuals were concerned about becoming a victim of crime. Example statements include, "Having someone break into your house and take your personal belongings while you are away." Response categories were (0) Not at all afraid, (1) Mildly afraid, (2) Moderately afraid, and (3) Very afraid. The possible range of scores is 0 - 30, with higher scores indicating higher levels of fear of neighborhood crime.

Total Stress. To measure total stress, each stress dimension was standardized using z-scores and summed. Scores below zero indicate below average stress exposure while scores above zero indicate higher than average stress exposure. The range was –3.80 to 18.30.

Physical Health Status

Pain. Participants who reported that they experienced pain were asked about the frequency and intensity of the pain. Those who indicated they did not having bodily pain were not asked questions about pain intensity or pain frequency and received "No pain" and "Never," respectively, as responses.

Pain Frequency. Pain frequency was assessed by asking, "How often during the past four weeks have you had pain or discomfort?" Responses were (0) Never, (1) A few times, (2) Often, and (3) Everyday or almost everyday.

Pain Intensity. Pain intensity was assessed using one item: "On average, how bad has your bodily pain been during the past four weeks?" Responses were (0) No pain, (1) Mild pain, (2) Moderate pain, and (3) Severe pain.

Pain Severity. Pain severity was obtained by crossing pain frequency and pain intensity with each other.

Activity Limitation. Activity limitation was assessed using one item: "Do you have a physical or health problem that limits or interferes with the amount or kind of day to day work or recreational activities you can engage in?" Response options were (0) No and (1) Yes. Participants who indicated they had an activity limitation were asked about the intensity and frequency of the activity limitation.

Activity Limitation Frequency. To assess activity limitation frequency, participants were asked, "How often does this condition interfere with or limit your usual activities?" Responses were (0) Never, (1) Rarely or not very often, (2) Sometimes, (3) Often, and (4) All the time. Participants who reported not experiencing activity limitation were not asked this question and the response was recorded as (0) Never.

Activity Limitation Intensity. Activity limitation intensity was assessed using a single item that asked, "How much does this condition limit your activities, considering what your activities would be if you did not have the condition?" Responses were (0) Not at all, able-bodied, (1) Not very much, (2) Somewhat, and (3) Very much. Participants who reported not experiencing activity limitation were not asked this question and the response was recorded as (0) Not at all, able-bodied.

Disability. Participants who were identified as having a disability in the screening process were asked, "Earlier someone in your household [or the respondent] told us that you had a condition or physical health problem that limits the kind or amount of activity that you can carry out (such as work, housework, school, recreation, shopping, or participation in social or community activities). I just want to confirm with you now whether that is correct." Participants who confirmed having a disability were coded as (1) Yes. All other responses were coded as (0) No.

Diabetes. To assess whether participants had been diagnosed with diabetes by a physician, participants were asked two questions, "In the past two years, have you had diabetes?" and "Was this health problem diagnosed by a physician?" Participants who responded yes to both questions were coded as (1) Yes. All other responses were coded as (0) No.

Arthritis. To assess whether a physician had diagnosed participants with arthritis, participants were asked two questions: "In the past two years, have you had arthritis?" and "Was this health problem diagnosed by a physician?" Participants who responded that a physician had diagnosed them with arthritis were coded as (1) Yes. All other responses were coded as (0) No.

Health Insurance. One item was used to assess whether participants had health insurance: "Do you currently have health insurance?" Response options were (0) No, and (1) Yes.

Difficulty Meeting Medical Expenses. To capture whether respondents had difficulty meeting medical expenses, participants were asked, "When you think of your financial situation overall, how difficult is it for you to meet the following needs: Medical Expenses?" Responses were (0) Not at all difficulty, (1) Somewhat difficult, (2) Very difficult.

Sociodemographic Factors

Gender was dichotomized as (0) Male and (1) Female.

Marital Status was categorized as (0) Married, (1) Never Married, and (2) Formerly Married.

Parental status was measured using one item: "Do you have children?" Response options were (0) No and (1) Yes.

Socioeconomic Status was calculated based on the composite scores of three equally-weighted items: occupational prestige, household income of each participant, and education.[132]

To minimize issues with missing data, scores for each of the three SES dimensions were standardized, summed, and divided by the number of dimensions on which the data were available.[71]

Language preference was assessed using one item: "What language do you prefer to speak?" Responses were (0) English most or all the time, (1) Spanish and English equally, (2) Spanish most or all of the time.

Country of Birth and Years in the U.S. was captured in a single variable to minimize issues with multicollinearity in the regression analyses. Country of birth was assessed using one item: "Where were you born?" Responses were (1) U.S., (2) Cuba, (3) Columbia, (4) Mexico, (5) Dominican Republic, (6) Nicaragua, (7) Puerto Rico, (8) Guatemala, (9) El Salvador, and (10) Other. Country of birth was collapsed into three categories: (0) U.S., (1) Cuba, and (3) Other Latin American Country. Years in the U.S. was measured with one item: "How many years have you been living in the United States?" Response options were categorized as (0) one to 10 years, (1) 11 – 72, and (3) U.S.-born. To combine the country of birth and years in the U.S. variable, five categories were developed: (0) U.S.-born, (1) Cuba (1 – 10 years living in the U.S.), (2) Cuba (11 or more years living in the U.S.), (3) Other Latin American Country (1 – 10 years living in the U.S.), (4) Other Latin American Country (11 or more years living in the U.S.).

Age. Age was measured continuously. Age ranged from 18 to 94 years.

Analytic Strategy

The present analysis was conducted in four steps. First, univariate statistics were examined to present the social and health characteristics of the sample (see Table 5.1). Second, latent class analysis was used to identify homogenous, mutually exclusive classes based on patterns across four health behaviors: physical activity, routine checkups, smoking, and drinking

(see Table 5.2). LCA was used to test two-class, three-class, four-class, and five-class models. The Akaike information criterion (AIC) and the Bayesian information criterion (BIC) are widely accepted methods for model comparison in LCA.[235] As such, AIC and BIC criteria were used to compare competing models, examine the relative balance of model fit and parsimony, and identify the best-fit model. Using the best-fit model, the probability of endorsing each health behavior was depicted in Figure 5.1. Third, the social and physical health characteristics associated with membership across the health behavior classes were examined (see Table 5.3). Chi-square tests were performed for categorical social and health characteristics, while one-way analysis of variance (ANOVA) tests were performed for continuous social and health characteristics. Fourth, multivariate linear regression was used to assess (a) depressive symptoms and (b) self-rated general health across the health behavior classes (see Figure 5.2), while controlling for demographic characteristics (gender, marital status, socioeconomic status, age, country of birth and years living in the U.S., and language preference), healthcare cost (health insurance status and difficulty paying medical expenses), and social resources (positive family support, family negative support, and medical mistrust). The covariates included in the regression models were data and theory driven. In particular, covariates were determined by significant social and health differences observed in Table 5.3 and based on prior research highlighting the role of demographic,[219,225] healthcare costs,[225] and social resources[219] on depressive symptoms and self-rated health.

Results

Participants' social and health characteristics are presented in Table 5.1. The majority of participants are foreign-born (90%), with half born in Cuba (50%). The majority of the sample has been living in the U.S. for over ten years (82%). The sample consists of a comparable

distribution of men (47%) and women (53%) with an average age of 57 years. Furthermore, 74% of participants are 45 years of age or older, highlighting the utility of these data for examining patterns in health behaviors and the management of stressors and health challenges among midlife and older Latinos. Overall, 23% of the participants in the sample have a disability, 12% have been diagnosed with diabetes, and 30% have been diagnosed with arthritis.

Table 5.1

Sample Characteristics, Disabilities Dataset, 2000-2001

	All (N=609)	
	Percent	*Mean (SD)*
Self-rated General Health [0,4]		1.23 (0.94)
Depressive Symptoms [0,48]		15.68 (8.88)
Stress Exposure		
Chronic Stress [0, 47]		4.77 (6.02)
Recent Life Events [0, 8]		0.84 (1.38)
Major Life Events [0, 7]		1.02 (1.25)
Daily Discrimination [0, 8]		3.36 (4.76)
Major Discrmination [0, 6]		0.46 (0.95)
Neighborhood Stressors [0, 30]		11.03 (10.86)
Total Stress Exposure [-3.80, 18.30]		0.96 (3.77)
Pain Frequency		
Never	64.37	
A Few Times	15.11	
Often	10.34	
Everyday or Almost Everyday	10.18	
Pain Intensity		
No Pain	64.37	
Mild Pain	8.05	
Moderate Pain	13.96	
Severe Pain	13.63	
Pain Severity [0, 9]		1.53 (2.64)
Activity Limitaton Frequency		
Never, Able-bodied	68.64	
Rarely or Not Very Often	2.46	
Sometimes	6.08	
Often	12.48	
All the Time	10.34	
Activity Limitation Intensity		
Not At All, Able-bodied	68.64	
Not Very Much	3.94	
Somewhat	13.46	
Very Much	13.96	
Disability		
Yes	23.15	
No	76.85	
Diabetes		
Yes	11.49	
No	88.51	
Arthritis		
Yes	29.72	
No	70.28	

Health Insurance		
Yes	76.14	
No	23.86	
Difficulty Meeting Medical Expenses		
Not At All Difficult	60.00	
Somewhat Difficult	23.41	
Very Difficult	16.59	
Positive Family Support [0, 24]		19.99 (5.19)
Family Pride [0, 18]		14.75 (3.66)
Friend Social Support [0, 24]		16.53 (7.31)
Family Negative Support [0, 24]		5.83 (5.74)
Medical Mistrust [0, 12]		4.44 (4.53)
Loneliness [0, 9]		4.24 (1.74)
Gender		
Female	53.20	
Male	46.80	
Marital Status		
Married	50.08	
Formerly Married	36.95	
Never Married	12.97	
Parental Status		
Yes	80.30	
No	19.70	
Socioeconomic Status (SES)		
Low SES	39.24	
Moderate SES	30.21	
High SES	30.54	
Language Preference		
English Most or All of the Time	65.52	
Spanish and English Equally	18.23	
Spanish Most or All of the Time	16.26	
Years in the U.S.and Country of Birth		
1 - 10 years (Cuba)	8.87	
11+ years (Cuba)	41.38	
1 - 10 years (Other Latino American Country)	9.36	
11+ years (Other Latino American Country)	30.54	
U.S.-born	9.85	
Age [18, 94]		56.62 (16.83)

Note. Variable ranges included in brackets. To assess total stress, each stress dimension was standardized using z-scores and summed. Scores below zero indicate below average stress exposure while scores above zero indicate higher than average stress exposure.

Health Behavior Classes

To identify mutually exclusive and empirically distinct classes of health behaviors, two, three, four, and five-class LCA models were tested. AIC and BIC criteria were used to examine the relative balance of model fit and parsimony and to select the final model (see Table 5.2).

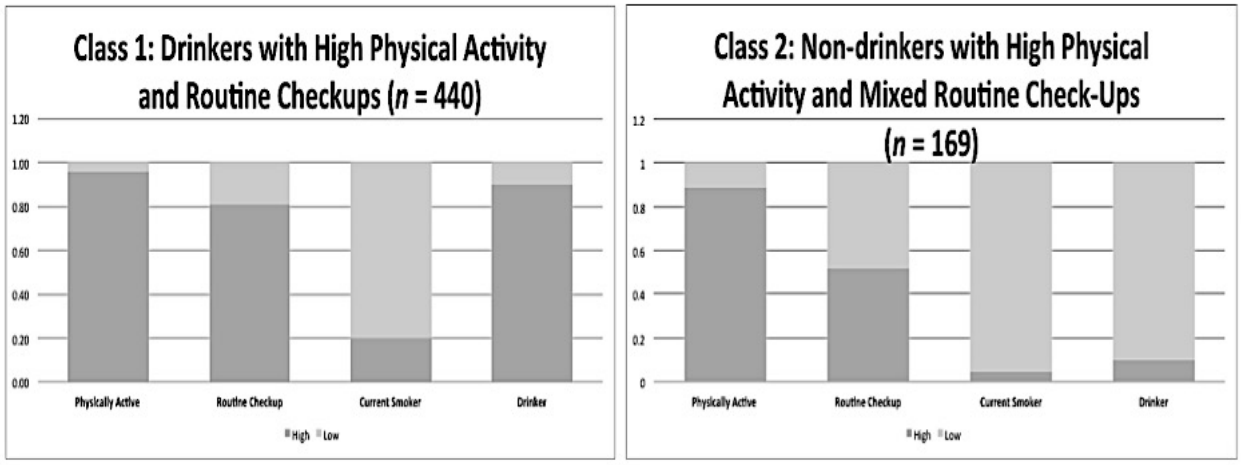
Table 5.2

Health Behaviors: Latent Class Analysis Model Comparison

	Two-Class Model	Three-Class Model	Four-Class Model	Five-Class Model
AIC	36.43	31.67	38.76	48.26
BIC	76.46	93.93	123.26	154.99
Adjusted BIC	47.88	49.48	62.94	78.80

Relative to the three-class model (AIC = 31.67, BIC = 93.93, adjusted BIC = 49.48), four-class model (AIC = 38.76, BIC = 123.26, adjusted BIC = 62.94), and five-class model (AIC = 48.26, BIC = 154.99, adjusted BIC = 78.80), adjusted and unadjusted BIC indicators suggest the two-class model (AIC = 36.43, BIC = 76.46, adjusted BIC = 47.88) was the best-fit model. Although AIC values were similar for the two-class and three-class model, BIC has been found to perform slightly better than AIC.[236] As such, the two-class model was used to profile health behavior patterns. In the two-class model, 72% (n = 440) of participants were in Class 1 and 18% (n = 169) or participants were in Class 2. Figure 5.1 depicts the probability of endorsing each health behavior within each of the two classes.

Figure 5.1 Probability of High Health Behaviors across Classes



Note. Figure 5.1 depicts the probability of endorsing each health behavior within each of the four classes.

Class 1: Drinkers with High Physical Activity and Routine Checkups. Members of Class 1 had a high probability of endorsing being physically active (96%), having a routine checkup in the past 12 months (81%), and having consumed alcohol in their lifetime (90%). Members of Class 1 had a low likelihood of currently smoking (20%).

Class 2: Non-drinkers with High Physical Activity and Moderate Routine Checkups Members of Class 2 had a high likelihood of endorsing being physically active (89%) and a low likelihood of smoking currently (5%) and drinking in their lifetime (10%). Members of Class 2 had an equal probability (52%) of having or not having a routine checkup in the past 12 months.

Overall, the likelihood of being physically active was high among both classes and the likelihood of being a current smoker was low among both classes. Class 1 and Class 2 varied on two health behaviors: routine checkups and drinking. More specifically, members of Class 1 were likely to have a routine checkup in the past 12 months, whereas members of Class 2 had an equal probability of having or not having a routine checkup in the past 12 months. Members of

Class 1 were likely to have consumed alcohol in their lifetime (drinkers), whereas members of Class 2 had a low likelihood of ever drinking (non-drinkers).

Social and Health Characteristics across Health Behavior Classes

Table 5.3 presents the distribution of participants' social and health characteristics for each of the health behavior classes. There were significant differences across health behavior classes on six of the seven dimensions of stress exposure, three social resources (positive family support, family negative support, and medical mistrust), healthcare costs (health insurance and difficulty meeting medical expenses), and most sociodemographic characteristics (gender, marital status, socioeconomic status, country of birth and years in the U.S., language preference, and age). Interestingly, there were no differences in physical health conditions (pain and activity limitation dimensions, disability, diabetes, or arthritis) between members of Class 1 and Class 2. Supplemental analyses (see Appendix B) suggest there were no differences in personal resources (spiritual coping, divine fate, mastery, or self-esteem) or faith-based indicators (e.g. belonging to a church, church attendance) between members of Class 1 and Class 2.

Overall, members of Class 1 had significantly higher stress exposure than members of Class 2 on all stress exposure domains except neighborhood fear of crime. Socioeconomic status varied between health behavior classes, $p < 0.001$. Members of Class 1 comprised a larger proportion of those belonging to the high SES strata (35%). Furthermore, those in Class 1 were also more likely to have health insurance ($p = 0.001$) and were less likely to experience difficulty meeting medical expenses ($p = 0.010$) than members of Class 2.

The distribution of three social resources varied significantly between Class 1 and Class 2. Relative to Class 2, members of Class 1 experienced higher levels of positive family support and lower levels of family negative support and medical mistrust.

Table 5.3

Social and Health Characteristics by Health Behavior Class (N = 609)

	Class 1: Drinkers with High Physical Activity and Routine Checkups (*n* = 440)		Class 2: Non-drinkers with High Physical Activity and Mixed Routine Checkups (*n* = 169)		p-value
	Percent	*Mean (SD)*	*Percent*	*Mean (SD)*	
Self-rated General Health [0,4]		1.15 (0.92)		1.44 (0.94)	p = 0.005
Depressive Symptoms [0,48]		16.21 (8.63)		14.29 (9.38)	p = 0.017
Stress Exposure					
Chronic Stress [0, 47]		5.42 (6.15)		3.07 (5.31)	p < 0.001
Recent Life Events [0, 8]		0.96 (1.41)		0.54 (1.26)	p = 0.001
Major Life Events [0, 7]		1.19 (1.30)		0.59 (0.99)	p < 0.001
Daily Discrimination [0, 8]		3.94 (4.75)		1.85 (4.44)	p < 0.001
Major Discrmination [0, 6]		0.53 (1.00)		0.25 (0.78)	p = 0.001
Neighborhood Stressors [0, 30]		11.34 (10.76)		10.22 (11.11)	p = 0.255
Total Stress Exposure [-3.80, 18.30]		1.55 (3.72)		-0.57 (3.46)	p < 0.001
Pain Frequency					p = 0.137
Never	62.50		69.23		
A Few Times	16.82		10.64		
Often	11.14		8.28		
Everyday or Almost Everyday	9.55		11.83		
Pain Intensity					p = 0.233
No Pain	62.50		69.23		
Mild Pain	8.18		7.69		
Moderate Pain	15.68		9.47		
Severe Pain	13.64		13.61		
Pain Severity [0, 9]		1.56 (2.62)		1.45 (2.69)	p = 0.634
Activity Limitaton Frequency					p = 0.312
Never, Able-bodied	68.86		68.05		
Rarely or Not Very Often	2.95		1.18		
Sometimes	6.82		4.14		
Often	11.36		15.38		
All the Time	10.00		11.24		
Activity Limitation Intensity					p = 0.090
Not At All, Able-bodied	68.86		68.05		
Not Very Much	4.77		1.78		
Somewhat	14.09		11.83		
Very Much	12.27		18.34		
Disability					p = 0.406
Yes	22.27		25.44		
No	77.73		74.56		
Diabetes					p = 0.209
Yes	12.50		8.88		
No	87.50		91.12		
Arthritis					p = 0.217
Yes	31.14		26.04		
No	68.86		73.96		

Health Insurance					p = 0.001
Yes	76.14		63.31		
No	23.86		36.69		
Difficulty Meeting Medical Expenses					p = 0.010
Not At All Difficult	60.00		47.34		
Somewhat Difficult	23.41		27.22		
Very Difficult	16.59		25.44		
Prayer					p = 0.093
Less Than Once a Week	8.36		16.19		
Once a Week	8.00		8.57		
Several Times a Week	18.18		23.81		
Once a Day	24.36		20.00		
Several Times a Day	41.09		31.43		
Positive Family Support [0, 24]		20.25 (4.94)		19.32 (5.76)	p = 0.047
Family Pride [0, 18]		14.88 (3.64)		14.43 (3.70)	p = 0.177
Friend Social Support [0, 24]		16.88 (7.30)		15.62 (7.33)	p = 0.057
Family Negative Support [0, 24]		5.53 (5.62)		6.62 (6.00)	p = 0.036
Medical Mistrust [0, 12]		4.15 (4.61)		5.18 (4.23)	p = 0.012
Loneliness [0, 9]		4.30 (1.67)		4.07 (1.92)	p = 0.132
Gender					p < 0.001
Female	47.05		69.23		
Male	52.95		30.77		
Marital Status					p < 0.001
Married	52.5		43.79		
Formerly Married	32.27		49.11		
Never Married	15.23		7.10		
Parental Status					p = 0.767
Yes	80.00		81.07		
No	20.00		18.93		
Socioeconomic Status (SES)					p < 0.001
Low SES	35.45		49.11		
Moderate SES	29.55		31.95		
High SES	35.00		18.93		
Language Preference					p = 0.003
English Most or All of the Time	61.59		75.74		
Spanish and English Equally	19.55		14.79		
Spanish Most or All of the Time	18.86		9.47		
Years in the U.S.and Country of Birth					p = 0.029
1 - 10 years (Cuba)	7.50		12.43		
11+ years (Cuba)	40.68		43.20		
1 - 10 years (Other Latino American Country)	8.41		11.83		
11+ years (Other Latino American Country)	31.82		27.22		
U.S.-born	11.59		5.33		
Age [18, 94]		55.30 (16.91)		60.05 (16.18)	p = 0.002

Note. Variable ranges included in brackets. To assess total stress, each stress dimension was standardized using z-scores and summed. Scores below zero indicate below average stress exposure while scores above zero indicate higher than average stress exposure.

There were significant demographic differences between the two health behavior classes on most sociodemographic characteristics. For instance, in Class 1 there were somewhat more men than women while in Class 2 69% were female. Members of Class 1 (M = 55.30, SD = 16.91) were also younger than member of Class 2 (M = 60.05, SD = 16.18), p = 0.002.

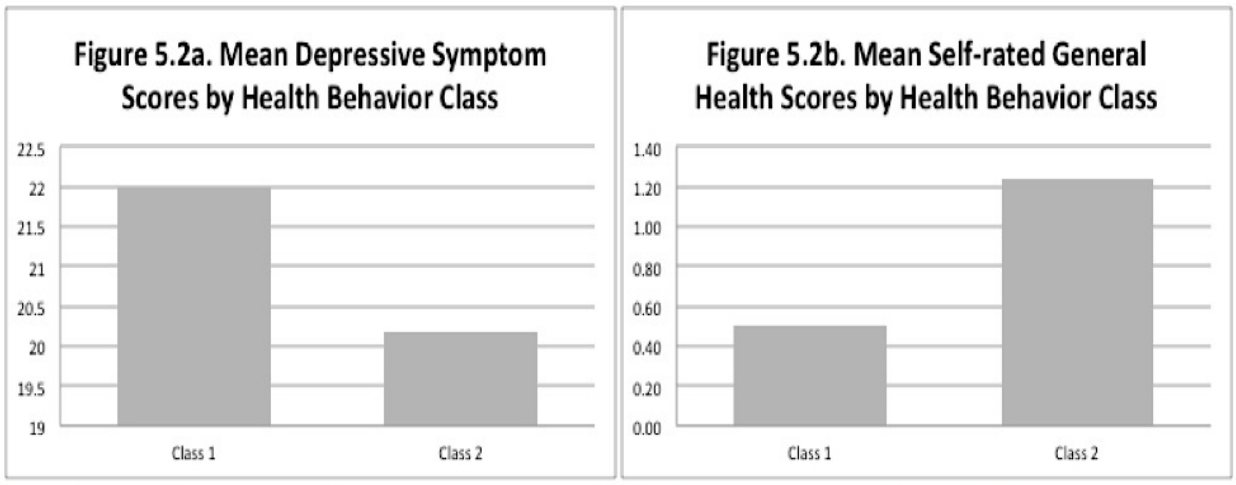
Overall, patterns in social and health characteristics suggest that members of Class 2 are socially disadvantaged, relative to members of Class 1. Approximately 49% of those in Class 2 are from low socioeconomic strata and 53% find it somewhat or very difficult to pay for medical expenses. Although 95% of Class 2 members are foreign-born, members of Class 2 comprise the largest proportion of individuals who prefer to speak English most or all of the time (76%). Moreover, members of Class 2 experience higher levels of family negative support and medical mistrust than members of Class 1. Despite being disadvantaged across several social indicators, members of Class 2 experience lower levels of stress exposure than members of Class 1. Overall, patterns in social and health characteristics suggest that each health behavior class is correlated with unique patterns in risks (e.g. stress exposure, medical mistrust) and social advantage or disadvantage.

Depressive Symptoms and Perceived General Health across Health Behavior Classes

Figure 5.2a presents results from the multivariate linear regression models and depicts the mean depressive symptom scores for each of the health behavior classes. Controlling for demographic characteristics (gender, marital status, socioeconomic status, age, country of birth and years living in the U.S., and language preference), healthcare access (health insurance status and difficulty paying medical expenses), and social resources (positive family support, family negative support, and medical mistrust), those in Class 1 (M = 21.99) had more depressive symptoms than those in Class 2 (M = 20.17, $p < 0.001$). Supplemental analyses (see Appendix C)

controlling only for demographic characteristics (gender, marital status, socioeconomic status, age, country of birth and years living in the U.S., and language preference) reveal the same pattern: those in Class 1 fare worse on depressive symptoms ($M = 16.46$) than those in Class 2 ($M = 16.05$), $p < 0.001$.

Figure 5.2. Mean Depressive Symptom Scores and Self-Rated General Health Scores across Health Behavior Classes

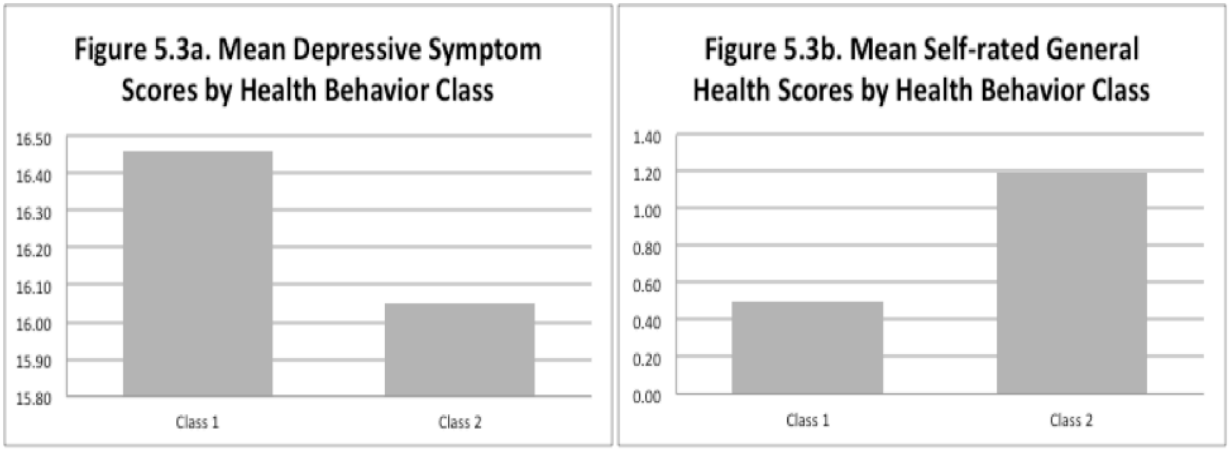


Note. Figure 5.2 depicts the mean depressive symptom and self-rated health scores after controlling for the following sociodemographic, healthcare cost, and social resources: gender, marital status, socioeconomic status, age, country of birth and years in the U.S., language preference, health insurance status, difficulty paying medical expenses, positive family support, family negative support, and medical mistrust. Those in Class 1 ($M = 21.99$) had more depressive symptoms than those in Class 2 ($M = 20.17$), $p < 0.001$. Differences in self-rated general health were marginally significant, such that members of Class 1 ($M = 0.50$) had better self-rated general health than members of Class 2 ($M = 1.24$), $p = 0.050$. An asterisk indicates significant differences between the classes, *p<0.05; **p<0.01; ***p<0.001 (two-tailed tests)

Figure 5.2b presents results from the multivariate linear regression models and depicts the mean self-rated general health scores for each of the health behavior classes. Controlling for demographic characteristics (gender, marital status, socioeconomic status, age, country of birth and years living in the U.S., and language preference), healthcare access (health insurance status and difficulty paying medical expenses), and social resources (positive family support, family negative support, and medical mistrust), there were significant differences in self-rated general

health between Class 1 (M = 0.50) and Class 2 (M = 1.24), p = 0.050. Supplemental analyses (see Table 5.3) controlling only for demographic characteristics (gender, marital status, socioeconomic status, age, country of birth and years living in the U.S., and language preference) suggest Class 1 members (M = 0.50) have significantly better self-rated health than Class 2 members (M = 1.19), p = 0.020. Comparing the reduced model and full regression model suggest that incorporating healthcare cost and social resources as covariates attenuates the healthcare cost and social resource advantages experienced by Class 1 members.

Figure 5.3. Mean Depressive Symptom Scores and Self-Rated General Health Scores across Health Behavior Classes



Note. Figure 5.3 depicts the mean depressive symptom and self-rated health scores after controlling for sociodemographic characteristics: gender, marital status, socioeconomic status, age, country of birth and years in the U.S., language preference. Those in Class 1 (M = 16.46) had more depressive symptoms than those in Class 2 (M = 16.05), p < 0.001. Those in Class 1 (M = 0.50) had significantly better self-rated general health scores than those in Class 2 (M = 1.19), p = 0.020. An asterisk indicates significant differences between the classes, *p<0.05; **p<0.01; ***p<0.001 (two-tailed tests)

Overall, results from the multivariate linear regressions consistently suggest that members of Class 1 have significantly higher depressive symptom scores than members of Class 2. On the other hand, when controlling for demographic characteristics only, members of Class 1 have significantly better self-rated general health scores than members of Class 1. Once healthcare cost and social resources are adjusted for, the pattern remains but becomes only

marginally significant. These results underscore the distinct role of healthcare costs and social resources for depressive symptoms and self-rated general health. Additionally, these results underscore the role of stress exposure on depressive symptoms, above and beyond demographic, healthcare cost, and social resources.

Discussion

Health behaviors are one of the many ways individuals cope with stressors.[215] When stressed, individuals may engage in health behaviors, such as smoking, drinking, eating, or exercising, to reduce feelings of distress. However, some health behavior patterns can promote health (e.g. physical activity) and others can undermine health (e.g. smoking). Consistently engaging in adaptive or maladaptive health behavior patterns can shape health trajectories across the life course and can exacerbate health problems. As such, examining health behavior patterns is an important aspect of understanding individuals coping and self-management processes. Assessing health behavior patterns among Latinos can identify the heterogeneity of coping among Latinos and can inform culturally-tailored health promotion efforts, such as intervention programs. The present study sought to (1) identify profiles of health behaviors (2) determine the social and physical health correlates associated with each health behavior profile; and (3) evaluate well-being (depressive symptoms and self-rated general health) across health behavior profiles.

Health Behavior Profiles: Social and Health Correlates

Two health behavior classes were identified. Class 1 was characterized by having a high probability of being physically active, engaging in routine checkups, and having consumed alcohol in their lifetime; they had a low probability of currently smoking. Class 2 was characterized by also having a high probability of being physically active. They had an equal

probability of engaging or not engaging in routine checkups, and a lower probability of currently smoking or consuming alcohol in their lifetime. The few studies that have used person-centered approaches to identify health behavior profiles have commonly observed between two to four mutually exclusive health behavior profiles, depending on the sample size and number of health behaviors considered in the latent class analysis.[218,232,234] Prior health behavior classes have been described as "healthier" and "less healthy" classes[218] or "healthy" and "unhealthy" groups[232] or not named.[234] As such, observing two health behavior classes is consistent with prior literature, particularly in cases where four health behaviors are observed.[218] Although the number of classes is consistent with prior literature, the classes observed in this study are more nuanced. Each health behavior profile observed in the study had a mixture of health behaviors that promote or undermine health.

Two health behaviors (physical activity and smoking) did not distinguish the health behavior classes from one another. In other words, the likelihood of engaging in these health behaviors was the same across the full sample. Physical activity was high among the full sample, which is surprising given that recent estimates from the CDC suggest that over 30% of Latinos in Florida are physically inactive.[237] Moreover, data for this study come from the Disabilities dataset and the sample is primarily comprised of older Latino adults, both of which may hinder physical activity engagement. Nevertheless, the physical health patterns among this sample may explain the high likelihood of physical activity that was observed. For instance, less than one-fourth of the sample has a disability, and the majority of the sample does not experience activity limitation or pain, which are well-documented risk factors for physical inactivity.[224,238]

While the likelihood of being physically active was high among both health behavior classes, the likelihood of smoking was low among both health behavior classes. The prevalence

of cigarette smoking among Latinos in the United States is lower than all other racial and ethnic groups, with the exception of Asian-Americans and the likelihood of smoking among foreign-born Latinos is lower than U.S.-born Latinos.[239] Given the composition of our sample—primarily older and foreign-born Latinos—findings from this study do not diverge from cigarette smoking trends among this population.

Two health behaviors (routine checkups and drinking) distinguished the health behavior classes from one another. Overall, likelihood of routine checkups varied by socioeconomic status, social support, and medical mistrust patterns. For instance, the likelihood of routine checkups in the past 12 months was high among the financially advantaged class with strong family support resources (Class 1), which is consistent with prior research.[225] Members of Class 2 had mixed patterns in routine checkups, such that only 52% had a high likelihood of engaging in routine checkups. The variance likelihood of having a routine checkup can stem from several factors specific to Class 2. For instance, members of Class 2 were characterized by being financially disadvantaged, with half belonging to the low socioeconomic strata and 53% indicating meeting medical expenses was very or somewhat difficult. Moreover, members of Class 2 reported higher levels of family negative support and medical mistrust than members of Class 1. Financial disadvantage, lack of health insurance, low social support, and medical mistrust are risk factors for not having a routine checkup[185,225] and may be coalescing to reduce the likelihood of routine checkups among members of Class 2. Overall, the high levels of these financial status, health insurance, social support, and medical mistrust risk factors among members of Class 2 may explain their patterns in routine checkups.

Lastly, the probability of lifetime alcohol consumption was high among members of Class 1 and low among members of Class 2. Class 1 is comprised equally of men and women,

whereas Class 2 is comprised of more women (69%) than men (31%). A large body of literature has documented gender differences in alcohol consumption.[240] Although the gap is narrowing, men have generally consumed more alcohol than women.[240] As such, gender differences across the health behavior classes may contribute to the alcohol consumption patterns observed. Supplemental analyses suggest there were no differences in faith-based activities (e.g. church attendance, church belongingness). These findings reduce the likelihood of spirituality or religion contributing to the differences in alcohol consumption across the classes.

Health Behaviors, Depressive Symptoms, and Self-rated General Health

Patterns in depressive symptoms across the health behavior classes consistently suggest that members of Class 1 have significantly more depressive symptoms than members of Class 2. The unadjusted depressive symptom scores first indicated this pattern and the pattern remained consistent, regardless of whether the analysis controlled for demographic characteristics only or controlled for demographic characteristics, healthcare costs, and social resources. Relative to Class 2, members of Class 1 are advantaged across numerous social indicators (e.g. socioeconomic status, healthcare costs, strong social resources) that are linked with favorable health outcomes. However, members of Class 1 experienced higher stress exposure than members of Class 2 on six of the seven domains of stress exposure. As such, findings suggest that even strong family resources and financial advantage cannot fully protect against the negative impact of stress exposure on mental health. To date, the majority of studies that have identified health behavior profiles using similar health behaviors assessed in the present study have not evaluated the relationship between health behavior profiles and depressive symptoms.[230,231] The limited research impedes direct comparisons with prior research assessing the relationship between health behavior profiles and depressive symptoms. However, trends

between the health behaviors specific to classes emerged. Members of Class 1 were more likely to be drinkers and engage in routine checkups, relative to Class 1. Drinking is one way individuals cope with stressors. As such, results may be indicating how the high levels of stress exposure among members in Class 1 are correlated with a high likelihood of alcohol consumption in their lifetime, and—in turn—are associated with higher depressive symptom scores. In future studies, capturing the quantity of alcohol consumed (e.g. heavy drinking) can clarify the nuances between drinking behaviors and depressive symptoms.

Patterns in self-rated general health across the health behavior classes suggest that members of Class 1 have better self-rated general health than members of Class 2. The statistical significance in self-rated general health differences becomes attenuated with a p=.05 after the inclusion of well-documented demographic, healthcare cost, and social resources as covariates. These findings suggest that the favorable self-rated general health outcomes observed by Class 1 partly stem from their advantaged status (e.g. socioeconomic status, family strain) compared to Class 2. Prior research on health behavior patterns suggests that members of the healthier class had better self-rated health scores than those in the less healthy class.[218] The health behavior profiles identified in this dissertation study used different health behaviors to identify latent classes and health behavior profiles were not dichotomized as a healthier and less healthy class. These differences restrict direct comparisons between prior research assessing health behavior profiles and self-rated health.

As a result of assessing both depressive symptoms and self-rated general health, findings from this study suggest that health behavior classes were differentially associated with mental and global health outcomes. Class 1 members experienced worse depressive symptom scores but better self-rated general health scores than those in Class 2. Findings from this study also

underscore stress exposure as more detrimental for mental health than global health. Once the effect of sociodemographic, health care costs, and social resources were accounted for, there were no differences in self-rated general health between the two health behavior classes. However, the differences in depressive symptoms remained, emphasizing the independent role of stress exposure for psychological distress, consistent with prior research. For instance, prior research has documented the deleterious role of stress exposure for depressive symptoms[36,241] and the negative association and positive association of social resources for self-rated health.[242]

Limitations

Findings from this study should be considered in light of several limitations. First, data for this study come from a regional sample of Latinos in Florida, which limits the generalizability of the findings to other populations and regions. Nevertheless, this is one of the first studies to employ latent class analysis to identify patterns in health behaviors among Latinos. As such, this is an important first step in assessing the distribution of health behavior patterns among a regional sample of Latinos. Future studies should examine health behavior profiles across diverse regions, to capture the heterogeneity of the Latino population in the United States and to better inform targeted health promotion efforts. Second, this study uses cross-sectional data, which introduces temporal ambiguity and limits any claims on causality between social and health characteristics, health behavior profiles, and well-being. To date, studies that have employed latent class analysis to the study of health behaviors have used cross-sectional data,[218,231,234] which is an important first step for revealing health behavior patterns rather than isolated health behaviors. Future research should use longitudinal data and latent transition analysis to assess the distribution of health behavior patterning among Latinos and to assess how these health behavior patterns change across the life course.

Third, there are limitations to the some of the health behaviors assessed. For instance, smoking was dichotomized as those who are current smokers and those who are not. Future research should quantify smoking behavior by measuring the number of cigarettes smoked per day and/or the duration (in years) of smoking over the life course. Similarly, in this study, alcohol consumption was dichotomized as those who have consumed any alcohol in their lifetime and those who have not. Although prior research has documented differences between those who are never drinkers and those who are drinkers, assessing diverse subgroups of drinkers (e.g. social drinkers, heavy drinkers, alcohol dependence) would shed light on the ways distinct drinking patterns are related to other health behaviors. Despite these limitations, this study assesses multiple health behaviors to capture a range of health behavior patterning. Moreover, this is the first study to consider routine checkups in health behavior profiles, which is particularly salient to be better understand how these patterns relate to the broader management of stressors and chronic health conditions.

Fourth, social desirability may bias health behavior reporting. Social desirability refers to the tendency of participants reporting their behaviors in a fashion that would project them in a favorable light. Social desirability has been found to bias self-reports of physical activity levels, for instance.[243] Despite the potential for this bias, it is important to note that the potential for social desirability bias affects numerous self-reports. However, it is critical to continue assessing health behaviors for health promotion and disease prevention.

Implications for Practice

Results from this study have several implications for public health practice. In particular, results suggest that routine checkups, medical mistrust, social support resources, and smoking behavior are the factors that should be targets of intervention. Results from the latent class

analysis suggest that routine checkups and alcohol consumption distinguish the two health behavior classes. Moreover, relative to Class 1, there was a correlation between lower likelihood of routine checkups and (a) high levels of medical mistrust and (b) low levels of social support. These patterns underscore prior literature regarding the interconnectedness of medical mistrust, social support, and routine checkups.[185,219,225] These findings also underscore the nature of health behaviors, such that quality of life and well-being are influenced by multiple health behaviors. As a result, intervention efforts should target health behaviors simultaneously.

Although the likelihood of smoking was low among the full sample, it is important to note that this sample is primarily comprised of older foreign-born Latino adults. The prevalence of foreign-born Latino adults is lower than U.S.-born Latinos and other racial and ethnic groups. Moreover, electronic cigarette use (vaping) is a growing public health concern in the U.S. and worldwide. Vaping has been identified as an epidemic, primarily among youth.[244] Given the relatively recent surge in vaping and its linkages with adverse health outcomes (e.g. severe pulmonary disease), public health professionals, clinical teams, and researchers will need to work together to identify the health consequences posed by tobacco products and to develop strategies to mitigate the prevalence and negative outcomes of diverse forms of tobacco products.[245]

Implications for Theory

Findings from this study have several implications for the study of health behaviors. First, results highlight the utility of employing latent class analysis to the study of health behaviors. As other scholars have noted, the protective effects of healthy lifestyles for disease prevention are well documented, but the underlying combinations of health behaviors are less well understood.[218] Coping is a complex behavior[113] and individuals engage in a diverse range of

health promoting and health harming behaviors. Employing person-centered approaches, such as latent class analysis, is an effective method of data reduction[230] as it facilitates observing health behavior combinations and assessing predictors and health consequences of these health behavior combinations. By employing latent class analysis to the study of health behaviors among Latino adults, two health behaviors emerged as potential intervention targets (routine checkups and alcohol consumption). Moreover, several social conditions (e.g. socioeconomic advantage, family social support, medical mistrust) were differentially associated with routine checkups, underscoring their significance.

These findings underscore the utility of integrating the life course perspective and stress process model to examine patterns in social and health characteristics, health behavior profiles, and well-being among Latinos. The role of health behaviors within the context of the stress process model has been largely overlooked. Results from this study underscore the importance of *linked lives, social resources,* and *social pathways* for identifying *health behavior* patterning. Patterns across social characteristics and social resources highlight the role of distinct trajectories for health behaviors, particularly routine checkups. To add, results from the multivariate regressions highlight the role of social resources in buffering the negative impact of stressors on well-being. Ultimately, this finding underscores the principle of linked lives, as social resources protect against depressive symptoms. Despite the protective role of social advantage and social resources in mitigating depressive symptoms, those with the highest levels of stress exposure still experienced the most depressive symptoms. As such, it is critical to continue identifying the most effective ways to mitigate the adverse effects of stress exposure on health. Health behaviors are one of the many ways individuals cope.[77,215] As such, theoretical approaches, such as the

stress and life course perspectives, provide a useful lens for the study of health behaviors patterns.

Moreover, this is one of the first studies to employ latent class analysis to the study of health behavior patterning among Latino adults. Prior research has employed latent class analysis to identify patterns in e-cigarette smoking among a sample of Latino, Black, and White adolescents,[246] to assess acculturation among Latino adults[247] and to assess family conflict profiles among Latino adults.[233] As such, this is the first study to assess diverse health behaviors among Latino adults. Findings from this study extend our understanding of the relationship between social risks/assets, health behavior patterning, and well-being by documenting the social and health correlates of distinct health behavior patterns and by assessing well-being.

Future Research

Overall, there is a paucity of research using person-centered approaches, such as latent class analysis, to identify subgroups (profiles, clusters) of health behaviors. Prior research on health behavior patterning has used cross-sectional studies to assess health behavior patterns. Replication of findings is an important next step. Prior research has commonly observed between two to four mutually exclusive health behavior profiles. However, heterogeneity in the number of classes observed may be a function of several factors, such as the number of health behaviors included in the latent class analysis, sample size, and the population studied. For instance, Laska and colleagues employed latent class analysis and observed four health behavior classes for both men and women. However, the greater number of classes may be due to assessing patterns across ten health behavior indicators among a large sample.[231] Taken together, these patterns suggest the need for replication. Further, findings are mixed regarding the role of personal resources for health. Prior research has found that personal resources, like self-efficacy, predict latent class

membership.[230] However, supplemental analyses in the present study suggest there were no differences in the distribution of personal resources across latent class membership.

Although the need for examining the implications of multiple health behaviors, rather than isolated health behaviors, has been emphasized, few studies have done so, particularly among racial and ethnic groups. Prior research has documented distinct patterns in coping, personal resources, and social resources across racial and ethnic groups. As such, there are good grounds to suspect, and therefore assess, whether health behavior patterns vary across racial and ethnic groups.

Employing person-centered approaches using longitudinal data and among racial and ethnic groups are important next steps for the study of health behaviors. For instance, latent transition analysis is a person-centered methodological approach used to assess how latent classes change over time.[248] For the study of health behaviors, it is important to recognize that health behaviors are not stagnant; instead, they fluctuate throughout the life course. As such, latent transition analysis can be a useful tool to assess how individuals' health behavior patterns change over time.

CHAPTER 6
DISCUSSION

Latinos are the largest minority group in the United States.[153] Relative to non-Hispanic Whites, Latinos fare poorly on indicators of well-being, such as depressive symptoms[115,154] and self-rated health.[7] Moreover, Latinos face a range of challenges (e.g. multiple chronic conditions, uninsured or underinsured status, underutilization of medical health services, and medical mistrust) that undermine their ability to successfully manage health- and stress-related challenges.[3,4,45] As such, identifying the ways that Latinos draw on coping resources to deal with stress and health challenges across the life course may be just as important as identifying risk factors that contribute to poor health.

Although prior coping research has examined the role of psychosocial and behavioral resources on health, most studies have focused on the role of one coping resource at a time. Recently, there has been a call to examine three distinct types of resources—personal, social, and behavioral[99] –and to observe these coping resources in their naturally occurring complex states.[182] It is critical to understand how patterns across these distinct types of resources shape health trajectories. Moreover, to better promote positive coping and maximize health among Latinos, it is critical to understand the types of personal, social, and behavioral coping tools that Latinos use to respond to hardships.

The overarching purpose of this dissertation was to understand the modifiable factors that improve quality of life among Latinos. Specifically, this dissertation study aimed to identify patterns in personal coping resources, social coping resources, and health behaviors, respectively, among Latinos and to identify the characteristics and well-being of Latinos associated with these coping profiles. Latent class analysis was employed to identify profiles of coping resources among Latinos, explore the social and health factors that shape the

development of these profiles, and assess how these profiles relate to well-being. The aims for each dissertation study was three-fold: (1) identify coping profiles among a sample of Latino adults, (2) examine the social and health correlates associated with each coping profile, and (3) evaluate two indicators of well-being (depressive symptoms and self-rated general health) across each coping profile. Study 1 identified coping profiles using six indicators of personal coping resources: spiritual coping, divine fate, ethnic centrality, ethnic identity, mastery, and self-esteem. Study 2 identified coping profiles using seven indicators of social coping resources: positive family support, family pride, family interaction, friend social support, family negative support, medical mistrust, and loneliness. Study 3 identified coping profiles based on patterns across four health behaviors: physical activity, routine checkups, smoking, and alcohol consumption. By having each dissertation study focus on patterns of personal resources, social resources, and health behaviors, respectively, this dissertation was able to uniquely capture latent subgroups across each coping resource type. Thus, the three studies work in concert to disentangle the relationship between distinct coping profiles and well-being. Several notable findings within and across the three dissertation studies emerged.

Profiles of Personal Resources, Social Resources, and Health Behaviors

Each study revealed unique patterns in the distribution of personal resources, social resources, and health behaviors. Based on patterns across six indicators of personal resources, Study 1 revealed four latent personal resource coping profiles. There were interesting patterns in the distribution of the two indicators of spirituality (spirituality and divine fate), the two indicators of ethnic identity (ethnic connectedness and ethnic centrality) and the two indicators of personal control (mastery and self-esteem). For instance, the two indicators of spirituality were present at steady levels across the four resource profiles. The two indicators of ethnic

identity varied within and across the resource profiles, underscoring the two constructs as independent from one another. Finally, the two indicators of personal control varied across the profiles, but were similar within classes, suggesting independence of the two constructs. Taken together, these findings extend the knowledge base of personal resources in three ways. First, prior research has documented the centrality of spiritual coping among Latinos.[21,31,249] Findings from this study are consistent with prior research, as they document spiritual coping resources as relatively high and stable among the profiles in this sample of Latinos. Second, results provide evidence for measuring distinct dimensions of ethnic identity and moving away from viewing ethnic identity as a single construct. Third, findings from this study underscore the possible interdependence of mastery and self-esteem. Among this sample, mastery and self-esteem were present at similar levels within the latent classes, such that both were high or both were low within the latent classes. To our knowledge, this is the first study to identify profiles of personal coping resources among Latinos. By applying latent class analysis to the study of personal coping resources, results underscore how personal resources are socially patterned among Latinos. In particular, results highlight how personal resource domains are nuanced, such that some personal resources are independent from one another (ethnic connectedness and ethnic centrality) and others covary (mastery and self-esteem).

Study 2 identified four mutually exclusive latent classes based on patterns across seven indicators of social resources. Interestingly, family interactions were high among all four classes, which diverges from prior research. Other studies using person-centered approaches to observe social resource patterning have typically identified one family-oriented class.[182,183,194,196] The divergent findings may stem from the population studied. For instance, prior research has primarily been conducted with samples of older adults in Europe,[194] Israel,[183] and Japan.[196]

Those in the United States have primarily examined social resource typologies among aging non-Latino populations.[182,195,196] In addition, a large body of literature across distinct fields (e.g. anthropology, public health, sociology) has documented the centrality of family among—but not limited to—Latinos. [165,168,172] As such, findings from this study may illustrate differences in social relationships across different populations. Moreover, although family interactions were frequent across all resource classes, the quality of family relations (e.g. positive family support, family pride, negative relationships) varied. Medical mistrust and friend social support—two indicators of lack of social resources—varied across the classes. Social and health characteristics are discussed in the following section and shed light on factors related to patterns in family relationships, medical mistrust, and friend social support.

Study 3 identified two health behavior classes using patterns across four indicators of health behaviors. The two classes were distinguished by two health behaviors: routine checkups within the past 12 months and lifetime alcohol consumption. These findings are partially consistent with prior research. For instance, prior research has observed between two to four latent classes of health behaviors. The variability in number of classes identified in prior research may stem from differences in the types of health behaviors observed (e.g. physical activity, dietary patterns, substance (ab)use, and sleep hygiene), the number of health behaviors measured, and the sample size for each study. For instance, studies with larger sample sizes and with ten health behaviors observed four distinct health behavior classes for men and women each. On the other hand, studies that have used fewer health behaviors (e.g. four to seven) to profile health behavior patterns observed two latent classes.[218,232,234] To date, this is the only study among Latinos to study health behavior patterns across a diverse range (e.g. physical activity, primary care, smoking, and alcohol consumption) of health behaviors. Future studies

should consider the inclusion of dietary patterns, medication adherence, and sleep hygiene to capture a larger range of health behaviors associated with health outcomes.

Despite the theoretical and empirical evidence highlighting the importance of assessing psychosocial and behavioral coping resources in their naturally occurring complex state, the research using person-centered approaches for the study of coping resources is scant. Overall, patterns across the three studies underscore how personal coping resources, social coping resources, and health behavior patterns among Latinos vary in distinct ways and, thus, provide evidence for the heterogeneity in coping among Latinos.

Patterns in Social and Health Characteristics across Coping Profiles

There were interesting findings across the three studies on the relationship between coping profiles and social and health characteristics. First, socially disadvantaged groups had lower levels of psychosocial resources than socially advantaged groups, consistent with prior research that social disadvantage confers fewer psychosocial resources.[34] Results from this study suggest that the two indicators of personal control—mastery and self-esteem—are lower among socially disadvantaged groups. On the other hand, personal and social resource profiles characterized by high levels of resources were correlated with socially advantaged members. Findings from this study are consistent with prior research documenting the relationship between distinct psychosocial resources and health and extend research by documenting similar patterns across profiles of psychosocial resources.

Second, some resource profiles were stable across social advantage/disadvantage. These were spiritual coping, divine fate, family interactions, loneliness, physical activity, and smoking. For instance, spiritual coping was high among all classes, suggesting that spiritual coping remains constant in this population of Latinos, despite social disadvantage. Prior research among

Latinos underscores spiritual coping as a tool that diverse (e.g. across distinct socioeconomic strata and country of origin) Latino groups draw on to cope with various challenges.[21,27,35] These findings suggest that health promotion efforts aimed at promoting or reducing these psychosocial and health behaviors are applicable broadly, across socially advantaged and disadvantaged groups.

Third, personal resources are stable across the life course, whereas social resources and health behaviors vary by age. The distribution of age varied across social resource and health behavior profiles. However, there were no differences in the distribution of age across personal resource profiles. These findings lend support to personal resources as being relatively stable across the life course,[23] and lend support to social resources and health behaviors as varying across the life course.[77,250,251] Prior research has documented distinct ways that social resources and health behaviors vary across the life course.[77,250,251] Overall, these patterns suggest that health promotion efforts targeting social resources and health behaviors should be tailored to individuals' stage within the life course (e.g. adolescent, older adults).

Taken together, results across the three studies extend the coping research by disentangling the ways that personal resources, social resources, and health behaviors are distributed across social advantage/disadvantage and age. The differences across resource profiles underscore nuances across the resource profiles and inform health promotion efforts.

Personal and Social Resources Profiles and Well-Being

Findings from Study 1 and Study 2 suggest that classes with fewer personal (Class 3) and social coping resources (Class 4) had the most depressive symptoms, controlling for factors such as demographic characteristics and physical health problems. In particular, classes with high levels of mastery and self-esteem (Class 1 and Class 2) had significantly fewer depressive

symptoms than classes with low levels of mastery and self-esteem (Class 3 and Class 4). Patterns in social resources and depressive symptoms presented in Study 2 suggest that classes with the fewest positive social resources (e.g. positive family support, family pride, friend social support) and the highest levels of strained family relationships and medical mistrust (Class 3) had the most depressive symptoms. These findings suggest that groups with the fewest social resources are vulnerable to more depressive symptoms, relative to their well-resourced counterparts. Overall, these patterns are consistent with prior research. For instance, past studies among non-Latino populations has documented that improving personal control resources, such as mastery and self-esteem, are the best candidates for improving mental health outcomes.[151,152] Findings from this study bolster prior research by (1) documenting similar trends among Latinos and (2) by employing latent class analysis to reveal the interrelatedness of particular coping resources, such as mastery and self-esteem. In other words, findings suggest that mastery and self-esteem are present at similar levels in each class: if one personal control indicator is low, the other personal control indicator is likely low as well. As such, mental health promotion efforts should allocate joint efforts toward increasing mastery and self-esteem.

The relationship between personal resource profiles and self-ratings of general health was distinct from the relationship between social resource profiles and self-ratings of general health. In particular, results from Study 1 suggest that those with the fewest personal coping resources had significantly better self-ratings of general health, relative to all other classes. On the other hand, results from Study 2 suggest that those with the fewest social coping resources had significantly poorer self-ratings of general health, relatively to well-resource classes.

The differing results across the two studies may suggest that both personal and social coping resources are negatively associated with depressive symptoms, but are differentially

associated with global measures of health. Prior research has documented psychosocial resources as having distinct effects on self-rated health.[252]

Health Behaviors and Well-Being

Relative to the psychosocial resource profiles, the relationship between health behavior profiles and well-being was less clear. Unlike Study 1 and Study 2, results from Study 3 did not clearly identify particular health behavior profiles associated with better overall well-being. In particular, two health behavior classes were identified. Class 1 was comprised of drinkers with high physical activity and routine checkups and was linked with better self-rated general health, yet more depressive symptoms, relative to Class 2. Class 2 was comprised of non-drinkers with high physical activity and mixed routine checkups and was linked with fewer depressive symptoms, but worse self-rated general health, relative to Class 1. As such, no particular health behavior profile fared better than the other on both indicators of well-being.

The unclear relationship between the health behavior profiles and well-being may arise from the latent class analysis results. For instance, health behaviors are inherently different from psychosocial resources and the nature of the health behaviors assessed contributes to the challenges in parsing out their relationship with well-being, relative to the psychosocial resources assessed in Study 1 and Study 2. Moreover, only two (routine checkups and lifetime drinking) of the four health behaviors distinguished the two health behavior profiles from one another. Future research should identify health behavior profiles using a broad range of health behaviors, such as physical activity, dietary patterns, sleep hygiene, healthcare utilization, medication adherence, risky drinking, smoking patterns, and substance abuse.

Findings from this dissertation and prior research highlight health behaviors as variable across the life course. As such, future research aimed at identifying health behavior patterns

should consider the role of age and age cohorts in determining analytic samples. The Disabilities dataset has a plethora of psychosocial resources, lending itself as a strong dataset to answer questions related to psychosocial resources and health. However, future research on health behavior patterns should work to use existing datasets or collect data on extensive measures of health behaviors. Using latent transition analysis with longitudinal data would uniquely capture how health behavior patterns change across time. Although this study yielded somewhat unclear results with respect to the relationship between health behavior profiles and well-being, this study was an important first step in identifying health behavior profiles among Latinos. To date, few studies have applied person-centered approaches to the study of health behaviors and fewer studies have done so among Latinos. Moreover, no studies have considered the role of routine checkups in these studies. Given the importance of healthcare utilization for health promotion, future studies should consider disease management behaviors (e.g. routine checkups, medication adherence) in addition to lifestyle behaviors (e.g. physical activity, sleep hygiene). Furthermore, prior research has identified social and health correlates associated with health behavior patterns or has linked health behavior patterns with one health outcome (e.g. mortality).[234] This study observed two indicators of well-being: depressive symptoms and self-rated general health. Although the findings from this study did not yield a simple answer with regard to health behaviors and well-being, results from this study underscore the complexity of health behavior patterns for individuals' well-being and suggest that health behaviors may differentially shape mental and global health outcomes.

Study Limitations

Findings from this study should be considered in light of several limitations. First, data from this study come from a regional sample of community-dwelling Miami Dade County

residents. As such, findings are not generalizable to all Latino subgroups in the U.S. Moreover, the sample is comprised of primarily middle and older Cuban Latinos. Future studies should replicate these findings using a nationally representative sample of Latinos or through several regional samples of Latinos to better capture the heterogeneity as well as similar patterns among Latino subgroups in the United States. Although this dissertation study draws on a regional sample, it is one of the first studies to identify psychosocial and behavioral profiles among Latinos in the United States. Findings from this study are an important step in identifying how to promote positive coping among Latinos. For instance, findings suggest under-resourced groups have lower levels of well-being than their well-resourced counterparts. Financially disadvantaged and foreign-born non-Cuban Latinos are more likely to report high medical mistrust than other Latino subgroups. These findings can inform health promotion efforts in Florida and provide grounds for future research in this area across the United States.

Second, this dissertation draws on cross-sectional data, which introduces temporal ambiguity, as temporal sequencing of variables cannot be ascertained. Consistent with other studies using latent class analysis to observe health differences across coping profiles, this study relies primarily on a correlational approach. Future research should draw on longitudinal studies to circumvent biases and limitations related to using cross-sectional data. The fluid nature of social coping resources and health behaviors across the life course lend themselves to longitudinal approach. In particular, future research can assess how social coping profiles and health behavior profiles are socially patterned across distinct stages in the life course. Despite the limitation of using cross-sectional data, this study is an important contribution to the study of coping, psychosocial resources, health behaviors, and well-being. This study used a diverse range of psychosocial and health behavior measures to identify the tools Latinos draw on to

cope. Moreover, this study connected the coping profiles to individuals' characteristics in an effort to identify how coping profiles are shaped by social and health conditions. Finally, this study assessed how each coping profile was linked with differential patterns in well-being.

Third, this dissertation study relied on self-reported measures. Self-reported measures, such a lifetime drinking, may be affected by recall bias.[253] Moreover, some self-reported measures, such as self-ratings of health, vary by language of interview.[147] Other self-reported measures, such as health behaviors, have been linked with social desirability bias.[243] Nonetheless, self-reported measures are widely used in the coping literature. In addition to using self-reported measures, this study assessed a diverse, yet limited, range of health behaviors. For instance, smoking behavior was dichotomized as currently smoking or not, while alcohol consumption patterns were dichotomized as drinkers and non-drinkers (lifetime abstainers). Future research using self-reported measures should assess number of cigarettes smoked across distinct time frames (e.g. day or year) and the quantity of alcohol currently consumed. Capturing the quantity of exposure to alcohol and nicotine and the frequency of exposure can provide additional unique insights into the conditions and extent individuals engage in these health behaviors. To minimize limitations regarding self-reported data, future studies should collect biomarkers, such as allostatic load. The use of biomarkers can uniquely assess the relationship between coping profiles and wear and tear on the body.

Implications for Research

This dissertation extends the knowledge base of coping resources among Latinos by empirically identifying mutually exclusive subgroups of individuals who share similar personal resources, social resources, and health behaviors patterns. Applying LCA to coping research

enables capturing a complex range of coping tools and enriches our theoretical understanding of the underpinnings of the latent coping construct.

By assessing well-being across profiles of personal resources, social resources, and health behaviors, respectively, several findings that extend the coping research emerged. First, findings from this dissertation identify the ways distinct resources differentially shape well-being. In particular, results bolster prior research documenting the relationship between personal control resources (e.g. mastery and self-esteem) and well-being and suggest that, relative to indicators of spiritual coping and ethnic identity, personal control resources are key drivers in shaping depressive symptoms. Second, by assessing distinct dimensions of social resources, the quality of relationships with family, rather than the frequency of contact, is linked with favorable well-being, while negative family interactions and medical mistrust are linked with low levels of well-being. Third, the relationship between health behavior profiles and well-being remains understudied among Latinos. Results from this dissertation suggest health behavior patterning may differentially shape depressive symptoms and self-ratings of general health.

Despite a large body of research dedicated to understanding the coping process and the distribution of coping resources, the majority of research has been conducted in silos, focusing exclusively on one domain of coping resources (e.g. social resources) or assessing the role of a single coping resource (e.g. spiritual coping) on health and well-being. Among non-Latino populations, there is a paucity of research that examines psychosocial resources and health behavior patterns in their naturally occurring complex states. Among Latinos, the studies are even more scarce. For these reasons, the application of person-centered approaches (e.g. latent class analysis, latent profile analysis, cluster analysis) are emerging as methodological approaches that lend themselves to the study of complex phenomena, such as coping resources.

To move beyond correlational studies, longitudinal studies with extensive data on psychosocial resources, health behaviors, coping, health, and social conditions must be collected nationally. To date, studies using latent class analysis for the study of psychosocial resources and health behaviors have used cross-sectional data. However, longitudinal data would allow for assessing bi-directional relationships between coping resources and well-being and would permit causal inferences to be made.

This dissertation integrated the stress process model within the life course perspective to identify coping resource patterns and link these patterns to well-being. Although the coping process can vary based on personal attributes, beliefs, and actions, results from this dissertation underscore the social patterning of psychosocial and health behavior patterning. Connecting *personal resource* and *social resource* profiles with *social characteristics* supports the life course perspective's concept of *social pathways*. Specifically, socially advantaged groups had more psychosocial resources to draw on and had favorable well-being outcomes. On the other hand, socially disadvantaged groups had lower levels of psychosocial resources to draw on in the coping process and experienced lower levels of well-being than their well-resourced counterparts. Prior research suggests social disadvantage confers fewer psychosocial resources. This study extends prior research by providing evidence of the interrelatedness, or clustering, of some personal resources and social resources. For instance, positive family resources cluster together and personal control resources cluster together. Other resources, such as ethnic identity dimensions, are independent of one another. These findings bolster evidence for the measurement of distinct dimensions of ethnic identity. The present study also underscores the role of age in the study of coping resources. Personal resources remain relatively stable across

the life course, while social resources and health behaviors vary across the life course. Future research should explicitly assess patterns in coping resources across distinct *age cohorts*.

Findings from this dissertation also emphasize the principle of *linked lives.* Those with high levels of positive family relations (e.g. positive family support, family pride, family interaction) fared significantly better on well-being than those with high levels of negative social relations (e.g. family negative support, medical mistrust). Further, those with high social resources were more likely to be in profiles with high routine checkups than those with lower levels of social resources. These findings illustrate the association between social resources and health behaviors and well-being and illustrate the protective role of social resources for health promotion.

A large number of studies have applied the stress process model to the study of personal resources and social resources; fewer studies have applied the stress process model to the study of health behaviors. Results from this dissertation suggest personal resource profiles and social resource profiles follow the same general pattern: those with higher psychosocial resources tend to have better more higher levels of well-being. However, patterns for health behaviors yielded an unexpected finding: although family resources and higher socioeconomic status are associated with favorable health outcomes, results from Study 3 suggest that even high levels of family resources and high socioeconomic status is not enough to fully protect against the negative impact of *stress exposure* on depressive symptoms. These findings underscore the need to continue exploring the best candidates for intervention, to ultimately promote positive coping among aging, high risk, and under-resourced groups.

Implications for Policy and Practice

Findings from this dissertation have policy-level and local-level implications. First, healthcare costs were associated with a lower likelihood of routine checkups. Routine checkups are necessary to promote the self-management of chronic conditions. As such, policymakers focusing on minimizing health disparities among Latinos should work to reduce healthcare costs and would increase individuals' likelihood of engaging with medical provides. Reducing healthcare costs would promote healthcare utilization and the successful management of health conditions, and would ultimately promote successful aging through primary, secondary, and tertiary prevention. Second, efforts should be aimed at increasing trust in the healthcare system. Prior research suggests medical mistrust is a challenge among Latinos and results from this study indicate that medical mistrust is particularly high among foreign-born non-Cuban Latinos and those from low socioeconomic strata. As such, efforts to increase trust in the healthcare system, medical providers, and treatment should consider those most vulnerable to medical mistrust. Third, resources should be allocated at the community-level, to work in concert with macro-level systems in place. Findings from this study underscore expenses related to healthcare as one key factor shaping routine checkups and identify groups at risk for being under-resourced. Policies at the federal and state level can work to allocate funding and resources to these groups. Given the high levels of medical mistrust observed among Latinos in prior research and among subgroups of Latinos in this study, it is critical to work with trusted community-based agencies to increase access to health promotion resources among vulnerable groups. Community-based resources can work to promote strategies for successfully coping with stressors and chronic diseases and to support health promotion efforts. For instance, community clinics and community-based organizations can work to link vulnerable groups (e.g. under-resourced individuals and socially disadvantaged groups) to health-promoting services and resources.

Moreover, health disparities efforts among Latinos should consider tailoring interventions in several ways. First, interventions should work to promote multiple psychosocial resource and health-promoting behaviors simultaneously, given that multiple coping resources, rather than isolated coping resources, are naturally occurring. Second, to successfully promote positive coping, intervention efforts must consider individuals' social networks, as the coping process is complex and involves intrapersonal and interpersonal resources. Third, to promote well-being, intervention efforts should place particular focus on promoting mastery, self-esteem, and strong social networks. Moreover, frequency of family interaction should not be interpreted as a proxy for social support. Findings from this study point to cultural differences in social resources and underscore the quality of social relations for well-being.

APPENDIX A

Personal Resources and Faith-Based Measures Used in Study 3

Supplemental Analyses

Personal Coping Resources

Spiritual Coping. Spiritual coping was assessed using one item that asked, "How often do you turn to religion or your spiritual beliefs to help you deal with your daily problems?" Response options were (0) Never, (1) Rarely, (2) Sometimes, (3) Often, and (4) Always.

Divine Fate. Divine fate was measured using seven items ($\alpha = 0.889$) that included statements, such as "God has a specific plan for my life." Response options ranged from (0) Strongly disagree to (3) Strongly agree. Items were summed so that higher scores indicate higher levels of divine fate.

Mastery. Mastery was assessed using a seven-item scale ($\alpha = 0.749$).[97] Participants were asked to identify the degree to which they agreed or disagreed to statements, such as "You have little control over the things that happen to you." Response options were (0) Strongly agree, (1) Mildly agree, (2) Neither agree nor disagree (3) Mildly disagree, and (4) Strongly disagree. Positive items were reverse coded. Items were summed so that higher scores indicate higher levels of mastery. The possible range of scores is 0 - 28.

Self-esteem. Self-esteem was measured using a six-item ($\alpha = 0.808$) subset of Rosenberg's (1979) measure.[71,129] Participants were asked to respond with the degree to which they agreed or disagreed to statements, such as "On the whole, you are satisfied with yourself." Response options were (0) Strongly disagree, (1) Mildly disagree, (2)

Neither agree nor disagree (3) Mildly agree, and (4) Strongly agree. One negative item (All in all, you are inclined to feel that you are a failure) was reverse-coded. The possible range of scores is 0 - 24, with higher scores indicating a higher presence of self-esteem.

Faith-based Indicators

Church Belongingness. To assess whether participants belonged to a church or place of worship, participants were asked, "Do you belong to a church, temple, synagogue, or mosque?" Response options were (0) No, (1) Yes, (2) Used to belong.

Church Attendance. To assess church attendance frequency, participants were asked, "Which of the following best describes how often you attend services at a church/temple/synagogue/mosque?" Response options were (0) Never, (1) Several times a year, (2) At least once a month, (3) Nearly every week, and (4) Every week or more.

APPENDIX B

Personal Resources and Faith-Based Indicators across Health Behavior Classes Used in Study 3 Supplemental Analyses

Appendix B. Personal Resources and Faith-Based Indicators by Health Behavior Class (N = 609)

	Class 1: Drinkers with High Physical Activity and Routine Checkups (*n* = 440)		Class 2: Non-drinkers with High Physical Activity and Mixed Routine Checkups (*n* = 169)		p-value
	Percent	*Mean (SD)*	*Percent*	*Mean (SD)*	
Spiritual Coping					p = 0.896
Never	9.09		8.88		
Rarely or Sometimes	30.00		31.95		
Often or Always	60.91		59.17		
Divine Fate [0 - 21]		15.25 (4.73)		14.78 (4.51)	p = 0.272
Mastery [0, 28]		17.40 (6.17)		16.49 (5.27)	p = 0.094
Self-esteem [0, 24]		21.00 (3.88)		20.41 (4.55)	p = 0.109
Church Belongingness					p = 0.129
Yes	51.36		55.03		
No	35.00		37.28		
Used to Belong	13.64		7.69		
Church Attendance					p = 0.570
Never	17.50		13.61		
Several Times a Year	35.45		33.73		
At Least Once a Month	22.27		27.22		
Nearly Every Week	10.68		12.43		
Every Week or More	14.09		13.02		

Note. Variable ranges included in brackets.

References

1. Bureau USC. *2017 American Community Survey 1-Year Estimates*.; 2017. https://factfinder.census.gov/faces/tableservices/jsf/pages/productview.xhtml?pid=ACS_16_1YR_CP05&prodType=table.
2. United States Census Bureau. *2017 National Population Projections Tables*.; 2018. https://www.census.gov/data/tables/2017/demo/popproj/2017-summary-tables.html.
3. Abraído-Lanza AF, White K, Armbrister AN, Link BG. Health status, activity limitations, and disability in work and housework among Latinos and non-Latinos with arthritis: An analysis of national data. *Arthritis Care Res*. 2006;55(3):442-450. doi:10.1002/art.21981
4. Lopez-Kinney D. Racism-related stress, appraisal, and coping among Latinos/as. *ProQuest Diss Theses*. 2001. http://ezproxy.net.ucf.edu/login?url=http://search.proquest.com/docview/251684964?accountid=10003%5Cnhttp://sfx.fcla.edu/ucf?url_ver=Z39.88-2004&rft_val_fmt=info:ofi/fmt:kev:mtx:dissertation&genre=dissertations+&+theses&sid=ProQ:ProQuest+Dissertations+&+T.
5. Bui Q, Doescher M, Takeuchi D, Taylor V. Immigration, acculturation and chronic back and neck problems among latino-americans. *J Immigr Minor Heal*. 2011;13(2):194-201. doi:10.1007/s10903-010-9371-3
6. Geronimus AT, Bound J, Waidmann T, Colen C, Steffick D. Inequality in Life Expectancy, Functional Status, and Active Life Expectancy across Selected Black and White Populations in the United States. *Demography*. 2001;38(2):227-251. doi:10.1353/dem.2001.0015

7. Liang J, Quiñones AR, Bennett JM, et al. Evolving self-rated health in middle and old age: How does it differ across black, hispanic, and White Americans? *J Aging Health*. 2010. doi:10.1177/0898264309348877

8. Parekh AK, Goodman RA, Gordon C, Koh HK, Conditions THIW on MC. Managing Multiple Chronic Conditions: A Strategic Framework for Improving Health Outcomes and Quality of Life. *Http://DxDoiOrg/101177/003335491112600403*. 2011;126(August 2011):460-471. doi:10.1177/003335491112600403

9. Keadle SK, McKinnon R, Graubard BI, Troiano RP. Prevalence and trends in physical activity among older adults in the United States: A comparison across three national surveys. *Prev Med (Baltim)*. 2016;89:37-43. doi:10.1016/j.ypmed.2016.05.009

10. Heilemann M V, Lee KA, Kury FS. Strengths and vulnerabilities of women of Mexican descent in relation to depressive symptoms. *Nurs Res*. 2002;51(3):175-182. doi:10.1097/00006199-200205000-00006

11. Torres L. Predicting levels of Latino depression: Acculturation, acculturative stress, and coping. *Cult Divers Ethn Minor Psychol*. 2010;16(2):256-263. doi:10.1037/a0017357

12. Torres L, Yznaga SD, Moore KM. Discrimination and Latino Psychological Distress: The Moderating Role of Ethnic Identity Exploration and Commitment. *Am J Orthopsychiatry*. 2011;81(4):526-534. doi:10.1111/j.1939-0025.2011.01117.x

13. Singh S, McBride K, Kak V. Role of Social Support in Examining Acculturative Stress and Psychological Distress Among Asian American Immigrants and Three Sub-groups: Results from NLAAS. *J Immigr Minor Heal*. 2015;17(6):1597-1606. doi:10.1007/s10903-015-0213-1

14. Ryff, Carol D., Keyes, Corey L. M., Hughes, Diane L. Status Inequalities, Perceived Discrimination, and Eudaimonic Well-Being. *J Health Soc Behav*. 2003.

15. Araújo BY. Understanding the Link Between Discrimination , Mental Health Outcomes , and Life Chances Among Latinos. 2006:245-266.

16. Flores E, Tschann JM, Dimas JM, Bachen EA, Pasch LA, De Groat CL. Perceived discrimination, perceived stress, and mental and physical health among Mexican-origin adults. *Hisp J Behav Sci*. 2008. doi:10.1177/0739986308323056

17. Garbi M de OSS, Hortense P, Gomez RRF, da Silva T de CR, Castanho ACF, Sousa FAEF. Pain intensity, disability and depression in individuals with chronic back pain. *Rev Lat Am Enfermagem*. 2014;22(4):569-575. doi:10.1590/0104-1169.3492.2453

18. Zettel-Watson L, Rutledge DN, Aquino JK, et al. Typology of chronic pain among overweight mexican americans. *J Health Care Poor Underserved*. 2011;22(3):1030-1047. doi:10.1353/hpu.2011.0092

19. Reyes-Gibby CC, Aday L, Cleeland C. Impact of pain on self-rated health in the community-dwelling older adults. *Pain*. 2002;95(1-2):75-82. doi:10.1016/S0304-3959(01)00375-X

20. Lazarus RS FS. *Stress, Appraisal, and Coping*.; 1984.

21. Abraído-Lanza AF, Vasquez E, Echeverría SE. En las manos de Dios [in God's hands]: Religious and other forms of coping among Latinos with arthritis. *J Consult Clin Psychol*. 2004;72(1):91-102. doi:10.1037/0022-006X.72.1.91

22. Aspinwall LG, Taylor SE. A stitch in time: Self-regulation and proactive coping - Swinburne Alma-Primo. *Psychol Bull*. 1997;121(3):417-436. http://librarysearch.swinburne.edu.au/primo_library/libweb/action/openurl;jsessionid=F7B364D9F851BA6BB2598E1EB3C07729?date=1997&artnum=&isbn=&isSerivcesPage=true&spage=417&dscnt=2&title=Psychological+Bulletin&atitle=A+stitch+in+time%3A+Self-regulation+and.

23. Taylor SE, Stanton AL. Coping Resources, Coping Processes, and Mental Health. *Annu Rev Clin Psychol*. 2007;3(1):377-401. doi:10.1146/annurev.clinpsy.3.022806.091520

24. Aldridge AA, Roesch SC. Developing coping typologies of minority adolescents: A latent profile analysis. *J Adolesc*. 2008;31(4):499-517. doi:10.1016/j.adolescence.2007.08.005

25. Tovel H, Carmel S. Maintaining Successful Aging: The Role of Coping Patterns and Resources. *J Happiness Stud*. 2014;15(2):255-270. doi:10.1007/s10902-013-9420-4

26. Carrion I V., Nedjat-Haiem F, Macip-Billbe M, Black R. "I Told Myself to Stay Positive" Perceptions of Coping Among Latinos With a Cancer Diagnosis Living in the United States. *Am J Hosp Palliat Med*. 2016. doi:10.1177/1049909115625955

27. Rutledge DN, Cantero PJ, Ruiz JE. Chronic pain management strategies used by low-income overweight Latinos. *Chronic Illn*. 2013;9(2):133-144. doi:10.1177/1742395312464719

28. Zea MC, Belgrave FZ, Townsend TG, Jarama SL, Banks SR. The influence of social support and active coping on depression among African Americans and Latinos with disabilities. *Rehabil Psychol*. 1996;41(3):225-242. doi:10.1037/0090-5550.41.3.225

29. R . Jay Turner JT and KVG. Personal Resources and Depression in the Transition to Adulthood : Ethnic Comparisons. *Am Sociol Assoc*. 2017;45(1):34-52. ttp://www.jstor.org/stable/3653803 REFERENC.

30. Sanchez M, Dillon F, Ruffin B, de la Rosa M. The Influence of Religious Coping on the Acculturative Stress of Recent Latino Immigrants. *J Ethn Cult Divers Soc Work*. 2012;21(3):171-194. doi:10.1080/15313204.2012.700443

31. Park CL. Religion as a meaning-making framework in coping with life stress. *J Soc Issues*. 2005;61(4):707-729. doi:10.1111/j.1540-4560.2005.00428.x

32. Fabricatore AN, Handal PJ, Rubio DM, Gilner FH. Stress, Religion, and Mental Health: Religious Coping in Mediating and Moderating Roles. *Int J Psychol Relig*. 2004;14(2):91-108. doi:10.1207/s15327582ijpr1402_2

33. Carrion I V., Nedjat-Haiem F, Macip-Billbe M, Black R. "I Told Myself to Stay Positive" Perceptions of Coping Among Latinos With a Cancer Diagnosis Living in the United States. *Am J Hosp Palliat Med*. 2017;34(3):233-240. doi:10.1177/1049909115625955

34. Meyer IH, Schwartz S, Frost DM. Social patterning of stress and coping: Does disadvantaged social statuses confer more stress and fewer coping resources? *Soc Sci Med*. 2008;67(3):368-379. doi:10.1016/j.socscimed.2008.03.012

35. Hunter-Hernández M, Costas-Muñíz R, Gany F. Missed Opportunity: Spirituality as a Bridge to Resilience in Latinos with Cancer. *J Relig Health*. 2015. doi:10.1007/s10943-015-0020-y

36. Driscoll MW, Torres L. Acculturative stress and latino depression: The mediating role of behavioral and cognitive resources. *Cult Divers Ethn Minor Psychol*. 2013;19(4):373-382. doi:10.1037/a0032821

37. Nápoles AM, Ortíz C, O'Brien H, Sereno AB, Kaplan CP. Coping Resources and Self-Rated Health Among Latina Breast Cancer Survivors. *Oncol Nurs Forum*. 2011;38(5):523-531. doi:10.1188/11.onf.523-531

38. Bonilla-Silva E. *Racism without Racists: Color-Blind Racism and the Persistence of Racial Inequality in America*.; 2006. doi:10.1017/CBO9781107415324.004

39. Bonilla-Silva E. From bi-racial to tri-racial: Towards a new system of racial stratification in the USA. *Ethn Racial Stud*. 2004;27(6):931-950. doi:10.1080/0141987042000268530

40. Omi M, Winant H. Racial formation. In: *Racial Formation in the United States*. ; 1994:1-5. doi:10.1007/s13398-014-0173-7.2

41. Aneshensel CS. Research in mental health: Social etiology versus social consequences. *J Health Soc Behav*. 2005. doi:10.1177/002214650504600301

42. Aneshensel CS, Rutter CM, Lachenbruch PA. Social Structure, Stress, and Mental Health: Competing Conceptual and Analytic Models. *Am Sociol Rev*. 1991;56(2):166. doi:10.2307/2095777

43. Turner RJ. Understanding Health Disparities: The Promise of the Stress Process Model. In: *Advances in the Conceptualization of the Stress Process*. ; 2009:3-21. doi:10.1007/978-1-4419-1021-9_1

44. Lerman S, Jung M, Arredondo EM, et al. Religiosity prevalence and its association with depression and anxiety symptoms among Hispanic/Latino adults. *PLoS One*. 2018. doi:10.1371/journal.pone.0185661

45. Wassertheil-Smoller S, Arredondo EM, Cai JW, et al. Depression, anxiety, antidepressant use, and cardiovascular disease among Hispanic men and women of different national backgrounds: Results from the Hispanic Community Health Study/Study of Latinos. *Ann Epidemiol*. 2014. doi:10.1016/j.annepidem.2014.09.003

46. Centers for Disease Control and Prevention. *Prevalence of Depression Among Adults Aged 20 and Over: United States, 2013–2016*.; 2018. https://www.cdc.gov/nchs/products/databriefs/db303.htm.

47. Cuijpers P, Smit F. Excess mortality in depression: a meta-analysis of community studies. *J Affect Disord*. 2002.

48. Castañeda SF, Buelna C, Giacinto RE, et al. Cardiovascular disease risk factors and psychological distress among Hispanics/Latinos: The Hispanic Community Health Study/Study of Latinos (HCHS/SOL). *Prev Med (Baltim)*. 2016. doi:10.1016/j.ypmed.2016.02.032

49. Clarke DM, Currie KC. Depression, anxiety and their relationship with chronic diseases: A review of the epidemiology, risk and treatment evidence. *Med J Aust*. 2009.

50. Doornbos MM, Zandee GL, DeGroot J. Clinging to Any Bit of Joy: Urban, Ethnically Diverse, Impoverished Women's Descriptions of Anxiety and Depression. *Arch Psychiatr Nurs*. 2012. doi:10.1016/j.apnu.2011.12.007

51. Brown TN, Turner RJ, Moore TR. The multidimensionality of health: associations between allostatic load and self-report health measures in a community epidemiologic study. *Heal Sociol Rev*. 2016;25(3):272-287. doi:10.1080/14461242.2016.1184989

52. Woo H, Zajacova A. Predictive Strength of Self-Rated Health for Mortality Risk Among Older Adults in the United States: Does It Differ by Race and Ethnicity? *Res Aging*. 2017. doi:10.1177/0164027516637410

53. Cummings JL, Jackson PB. Race, gender, and SES disparities in self-assessed health, 1974-2004. *Res Aging*. 2008. doi:10.1177/0164027507311835

54. Borrell LN, Dallo FJ. Self-Rated health and race among hispanic and non-hispanic adults. *J Immigr Minor Heal*. 2008. doi:10.1007/s10903-007-9074-6

55. Bzostek S, Goldman N, Pebley A. Why do Hispanics in the USA report poor health? *Soc Sci Med*. 2007. doi:10.1016/j.socscimed.2007.04.028

56. Elder, G. H., Johnson, M. K., & Crosnoe R. The emergence and development of life course theory. In Handbook of the life course. 2003:3-19.

57. Black BP, Holditch-Davis D, Miles MS. Life course theory as a framework to examine becoming a mother of a medically fragile preterm infant. *Res Nurs Heal*. 2009;32(1):38-49. doi:10.1002/nur.20298

58. Gee GC, Walsemann KM, Brondolo E. A life course perspective on how racism may be related to health inequities. *Am J Public Health*. 2012;102(5):967-974. doi:10.2105/AJPH.2012.300666

59. World Health Organization. *The Implications for Training of Embracing a Life Course Approach to Health*.; 2000.

60. Pearlin LI. The Stress Process Revisited: Reflections on Concepts and Their Interrelationships. In: *Handbook of the Sociology of Mental Health*. ; 1999:395-415. doi:10.1007/0-387-36223-1_19

61. Abdou C. Minority aging before birth and beyond: Life span and intergenerational adaptation through positive resources. *Handb Minor Aging*. 2014:9-24.

62. Krieger N, Whitmarsh I. The Science and Epidemiology of Racism and Health: Racial/Ethnic Categories, Biological Expressions of Racism, and the Embodiment of Inequality — an Ecosocial Perspective. In: *What's the Use of Race? : Modern Governance and the Biology of Difference*. ; 2010:303.

63. Krieger N. Ecosocial Theory of Disease Distribution. In: *Epidemiology and the People's Health: Theory and Context*. ; 2011. doi:10.1093/acprof:oso/9780195383874.001.0001

64. Minino AL, Murhphy SL. *Death in the United States*. Hyattsville, MD; 2010.

65. Farley T, Galves A, Dickinson LM, de Jesus Diaz Perez M. Stress, coping, and health: A comparison of Mexican immigrants, Mexican-Americans, and non-Hispanic Whites. *J Immigr Health*. 2005;7(3):213-220. doi:10.1007/s10903-005-3678-5

66. Acevedo-Garcia D, Bates LM. Latino health paradoxes: Empirical evidence, explanations, future research, and implications. In: *Latinas/Os in the United States: Changing the Face of América*. ; 2008. doi:10.1007/978-0-387-71943-6_7

67. Abraído-Lanza AF, Dohrenwend BP, Ng-Mak DS, Turner JB. The Latino mortality paradox: A test of the "salmon bias" and healthy migrant hypotheses. *Am J Public Health*. 1999. doi:10.2105/AJPH.89.10.1543

68. Morales LS, Lara M, Kington RS, Valdez RO, Escarce JJ. Socioeconomic, cultural, and behavioral factors affecting hispanic health outcomes. *J Health Care Poor Underserved*. 2002. doi:10.1177/104920802762475120

69. Back L, Solomos J. *Theories of Race and Racism*.; 2000. doi:10.1007/978-1-349-22911-6_2

70. Dressler WW, Oths KS, Gravlee CC. RACE AND ETHNICITY IN PUBLIC HEALTH RESEARCH: Models to Explain Health Disparities. *Annu Rev Anthropol*. 2005;34(1):231-252. doi:10.1146/annurev.anthro.34.081804.120505

71. Gayman MD, Lennox Kail B, Spring A, Greenidge GR. Risk and Protective Factors for Depressive Symptoms Among African American Men: An Application of the Stress Process Model. *Journals Gerontol Ser B*. 2017;00(00):1-11. doi:10.1093/geronb/gbx076

72. Avison WR, Aneshensel CS, Schieman S, Wheaton B. *Advances in the Conceptualization of the Stress Process: Essays in Honor of Leonard I. Pearlin*.; 2010. doi:10.1007/978-1-4419-1021-9

73. Pearlin LI, Schieman S, Fazio EM, Meersman SC. Stress, Health, and the Life Course: Some Conceptual Perspectives. *J Health Soc Behav*. 2005;46(2):205-219. doi:10.1177/002214650504600206

74. Ong AD, Williams DR, Nwizu U, Gruenewald TL. Everyday unfair treatment and multisystem biological dysregulation in African American adults. *Cult Divers Ethn Minor Psychol*. 2017;23(1):27-35. doi:10.1037/cdp0000087

75. Geronimus AT, Hicken M, Keene D, Bound J. "Weathering" and age patterns of allostatic load scores among blacks and whites in the United States. *Am J Public Health*. 2006;96(5):826-833. doi:10.2105/AJPH.2004.060749

76. Kahn JR, Pearlin LI. Financial strain over the life course and health among older adults. In: *Journal of Health and Social Behavior*. Vol 47. ; 2006:17-31. doi:10.1177/002214650604700102

77. Umberson D, Liu H, Reczek C. Stress and health behaviour over the life course. *Adv Life Course Res*. 2008. doi:10.1016/S1040-2608(08)00002-6

78. Pearlin LI, Menaghan EG, Lieberman MA, Mullan JT. The Stress Process. *J Health Soc Behav*. 1981;22(4):337. doi:10.2307/2136676

79. Pearlin L. The Stress Process Revisited. *Handb Sociol Ment Heal*. 1999:395-416. doi:10.1007/0-387-36223-1_19

80. Yip T, Gee GC, Takeuchi DT. Racial Discrimination and Psychological Distress: The Impact of Ethnic Identity and Age Among Immigrant and United States-Born Asian Adults. *Dev Psychol*. 2008;44(3):787-800. doi:10.1037/0012-1649.44.3.787

81. Sanchez M, Dillon F, Ruffin B, de la Rosa M. The Influence of Religious Coping on the Acculturative Stress of Recent Latino Immigrants. *J Ethn Cult Divers Soc Work*. 2012;21(3):171-194. doi:10.1080/15313204.2012.700443

82. Aselton P. Sources of Stress and Coping in American College Students Who Have Been Diagnosed With Depression. *J Child Adolesc Psychiatr Nurs*. 2012;25(3):119-123. doi:10.1111/j.1744-6171.2012.00341.x

83. Perez SM, Gavin JK, Diaz VA. Stressors and coping mechanisms associated with perceived stress in Latinos. *Ethn Dis*. 2015;25(1):78-82. http://www.ncbi.nlm.nih.gov/pubmed/25812256.

84. Umezawa Y, Lu Q, You J, Kagawa-Singer M, Leake B, Maly RC. Belief in divine control, coping, and race/ethnicity among older women with breast cancer. *Ann Behav Med*. 2012;44(1):21-32. doi:10.1007/s12160-012-9358-5

85. Perez SM et al. Stressors and Coping Mechanisms Associated with Perceived Stress in Latinos. *Ethn Dis*. 2015;25.

86. Campbell LC, Andrews N, Scipio C, Flores B, Feliu MH, Keefe FJ. Pain Coping in Latino Populations. *J Pain*. 2009;10(10):1012-1019. doi:10.1016/j.jpain.2009.03.004

87. Gloria CT, Steinhardt MA. Relationships among Positive Emotions, Coping, Resilience and Mental Health. *Stress Heal*. 2016;32(2):145-156. doi:10.1002/smi.2589

88. Oquendo MA, Dragatsi D, Harkavy-Friedman J, et al. Protective Factors Against Suicidal Behavior in Latinos. *J Nerv Ment Dis*. 2005;193(7):438-443. doi:http://dx.doi.org/10.1097/01.nmd.0000168262.06163.31

89. James SA. John Henryism and the health of African-Americans. *Cult Med Psychiatry*. 1994;18(2):163-182. doi:10.1007/BF01379448

90. Shavers VL, Bakos A, Sheppard VB. Race, ethnicity, and pain among the U.S. adult population. *J Health Care Poor Underserved*. 2010;21(1):177-220. doi:10.1353/hpu.0.0255

91. Turner RJAY, State F. Personal Resources and Depression in the Transition to Adulthood : Ethnic Comparisons * Delivered by Ingenta to Date : Florida State University - and. 2006;45(1):34-52.

92. Erving CL, Thomas CS. Race, Emotional Reliance, and Mental Health. *Soc Ment Health*. 2018. doi:10.1177/2156869317713552

93. Pearlin LI. The sociological study of stress. *J Health Soc Behav*. 1989;30(3):241-256. doi:10.2307/2136956

94. Turner RJ. Understanding health disparities: The relevance of the stress process model. *Soc Ment Health*. 2013;3:170-186.

95. Turner RJ, Roszell P. *Psychosocial Resources and the Stress Process*. (W.R. Avison and I.H. Gotlib, ed.). New York: Springer; 1994.

96. Turner RJ, Noh S. Class and Psychological Vulnerability Among Women: The Significance of Social Support and Personal Control. *J Health Soc Behav*. 2006. doi:10.2307/2136299

97. Pearlin LI, Schooler C. The structure of coping. *J Health Soc Behav*. 1978;19:2-21. doi:10.2307/2136319

98. Sehmi R, Maughan B, Matthews T, Arseneault L. No man is an island: social resources, stress and mental health at mid-life. *Br J Psychiatry*. 2019. doi:10.1192/bjp.2019.25

99. Zhang CQ, Chung PK, Zhang R, Schüz B. Socioeconomic Inequalities in Older Adults' Health: The Roles of Neighborhood and Individual-Level Psychosocial and Behavioral Resources. *Front Public Heal*. 2019;7(October). doi:10.3389/fpubh.2019.00318

100. Abraído-Lanza AF, Guier C, Revenson TA. Coping and social support resources among Latinas with arthritis. *Arthritis Rheum*. 1996;9(6):501-508. doi:10.1002/art.1790090612

101. Hansen MC, Aranda MP. Sociocultural influences on mental health service use by Latino older adults for emotional distress: Exploring the mediating and moderating role of informal social support. *Soc Sci Med*. 2012;75(12):2134-2142. doi:10.1016/j.socscimed.2012.06.029

102. Lanza ST, Rhoades BL. Latent Class Analysis: An Alternative Perspective on Subgroup Analysis in Prevention and Treatment. *Prev Sci*. 2013;14(2):157-168. doi:10.1007/s11121-011-0201-1

103. Larsen FB, Pedersen MH, Friis K, Gluèmer C, Lasgaard M. A Latent class analysis of multimorbidity and the relationship to socio-demographic factors and health-related quality of life. A national population-based study of 162,283 Danish Adults. *PLoS One*. 2017;12(1):1-17. doi:10.1371/journal.pone.0169426

104. Pearlin L, Schieman S, Fazio EM, Meersman SC. Stress, Health, and the Life Course: Some Conceptual Perspectives. *J Health Soc Behav*. 2005;46(2):205-219. doi:10.1177/002214650504600206

105. Aranda MP, Lincoln KD. Financial Strain, Negative Interaction, Coping Styles, and Mental Health Among Low-Income Latinos. *Race Soc Probl*. 2011;3(4):280-297. doi:10.1007/s12552-011-9060-4

106. Burke Winkelman S, Chaney EH, Bethel JW. Stress, depression and coping among latino migrant and seasonal farmworkers. *Int J Environ Res Public Health*. 2013;10(5):1815-1830. doi:10.3390/ijerph10051815

107. Gayman MD, Turner RJ, Cui M. Physical limitations and depressive symptoms: exploring the nature of the association. *J Gerontol B Psychol Sci Soc Sci*. 2008;63(4):S219-S228. doi:http://dx.doi.org/10.1093/geronb/63.4.S219

108. Turner RJ, Lloyd DA, Taylor J. Physical disability and mental health: An epidemiology of psychiatric and substance disorders. *Rehabil Psychol*. 2006. doi:10.1037/0090-5550.51.3.214

109. Berkman LF, Glass T, Brissette I, Seeman TE. From social integration to health: Durkheim in the new millennium. *Soc Sci Med*. 2000;51(6):843-857. doi:10.1016/S0277-9536(00)00065-4

110. Wilson MW. Perceived stress, pain coping strategies, pain interference, and social support: Mediators and moderators of depression in a spinal cord injury sample with chronic pain. *ProQuest Diss Theses*. 2007:109-n/a. http://search.proquest.com/docview/304893018?accountid=10785%5Cnhttp://linksource.ebsco.com/linking.aspx?sid=ProQuest+Dissertations+&+Theses+A&I&fmt=dissertation&

genre=dissertations+&+theses&issn=&volume=&issue=&date=2007-01-01&spage=&title=Perceived+s.

111. Brody GH, Lei MK, Chae DH, Yu T, Kogan SM, Beach SRH. Perceived Discrimination Among African American Adolescents and Allostatic Load: A Longitudinal Analysis With Buffering Effects. *Child Dev*. 2014;85(3):989-1002. doi:10.1111/cdev.12213

112. Bates MS, Edwards WT. Ethnic variations in the chronic pain experience. *Ethn Dis*. 1992;2(1):63-83.

113. DiMaggio P, Garip F. Network Effects and Social Inequality. *Annu Rev Sociol*. 2012;38(1):93-118. doi:10.1146/annurev.soc.012809.102545

114. Upchurch DM, Stein J, Greendale GA, et al. A Longitudinal Investigation of Race, Socioeconomic Status, and Psychosocial Mediators of Allostatic Load in Midlife Women. *Psychosom Med*. 2015;77(4):402-412. doi:10.1097/PSY.0000000000000175

115. González HM, Tarraf W, Whitfield KE, Vega WA. The epidemiology of major depression and ethnicity in the United States. *J Psychiatr Res*. 2010. doi:10.1016/j.jpsychires.2010.03.017

116. Whitfield KE, Baker TA, Abdou CM, et al. Stress, Discrimination, and Coping in Late Life. In: *Handbook of Minority Aging*. ; 2018. doi:10.1891/9780826109644.0005

117. Lariscy JT, Hummer RA, Hayward MD. Hispanic Older Adult Mortality in the United States: New Estimates and an Assessment of Factors Shaping the Hispanic Paradox. *Demography*. 2015. doi:10.1007/s13524-014-0357-y

118. Taylor SE, Seeman TE. Psychosocial resources and the SES-Health relationship. In: *Annals of the New York Academy of Sciences*. ; 1999. doi:10.1111/j.1749-6632.1999.tb08117.x

119. Keith VM. Stress, discrimination, and coping in late life. *Handb Minor aging*. 2014:65084.

120. Elder Jr. GH. *Children of the Great Depression: Social Change in Life Experience*.; 1974. http://ezproxy.lib.umb.edu/login?url=http://search.ebscohost.com/login.aspx?direct=true&db=sih&AN=COMP0004434425&site=ehost-live.

121. Elder GH. The Life Course as Developmental Theory. *Child Dev*. 1998;69(1):1-12.

122. Pearlin LI, Bierman A. Current Issues and Future Directions in Research into the Stress Process. In: ; 2013. doi:10.1007/978-94-007-4276-5_16

123. Radloff LS. The CES-D scale: a self-report depression scale for research in the general population. *Appl Psychol Meas*. 1977;1(3):385-401.

124. Hays, R.D. Sherbourne, D., Mazel RM. THE RAND 36-ITEM HEALTH SURVEY 1.0. 1993;2(July):217-227.

125. Turner RJ, Thomas CS, Brown TH. Childhood adversity and adult health: Evaluating intervening mechanisms. *Soc Sci Med*. 2016;156:114-124. doi:10.1016/j.socscimed.2016.02.026

126. Phinney JS. The Multigroup Ethnic Identity Measure: A New Scale for Use with Diverse Groups. *J Adolesc Res*. 1992. doi:10.1177/074355489272003

127. Turner RJ, Lloyd DA, Taylor J. Stress burden, drug dependence and the nativity paradox among U.S. Hispanics. *Drug Alcohol Depend*. 2006. doi:10.1016/j.drugalcdep.2005.11.003

128. Martino SC, Weinick RM, Kanouse DE, et al. Reporting CAHPS and HEDIS data by race/ethnicity for medicare beneficiaries. *Health Serv Res*. 2013. doi:10.1111/j.1475-6773.2012.01452.x

129. Rosenberg M. *Conceiving the Self*. Malabar, FL: Krieger Publishing Company; 1979.

130. Wheaton B. Sampling the Stress Universe. In: *Stress and Mental Health*. ; 2013. doi:10.1007/978-1-4899-1106-3_4

131. Kessler RC, Mickelson KD, Williams DR. The Prevalence, Distribution, and Mental Health Correlates of Perceived Discrimination in the United States. *J Health Soc Behav*. 1999;40(3):208. doi:10.2307/2676349

132. Hollingshead AB. *Two Factor Index of Social Position*. New Haven, CT; 1957.

133. Kjeken I, Dagfinrud H, Heiberg T, Kvien TK. Multidisciplinary approach to rheumatoid arthritis. In: *Rheumatology: Sixth Edition*. Vol 1-2. ; 2014:809-814. doi:10.1016/B978-0-323-09138-1.00098-X

134. Al Snih S, Markides KS, Ray L, Goodwin JS. Impact of pain on disability among older Mexican Americans. *J Gerontol A Biol Sci Med Sci*. 2001.

135. Aldridge AA, Roesch SC. Developing coping typologies of minority adolescents: A latent profile analysis. *urnal Adolesc*. 2008;31(4):499-517.

136. Kam JA, Basinger ED, Guntzviller LM. Communal Coping Among Spanish-Speaking Mother–Child Dyads Engaging in Language Brokering: A Latent Class Analysis. *Communic Res*. 2017;44(5):743-769. doi:10.1177/0093650216684927

137. Perl P, Greeley JZ, Gray MM. What proportion of adult Hispanics are Catholic? A review of survey data and methodology. *J Sci Study Relig*. 2006. doi:10.1111/j.1468-5906.2006.00316.x

138. Ramos AI, Woodberry RD, Ellison CG. The Contexts of Conversion among U.S. Latinos. *Sociol Relig A Q Rev*. 2017. doi:10.1093/socrel/srx014

139. Lachman ME, Weaver SL. The Sense of Control as a Moderator of Social Class Differences in Health and Well-Being. *J Pers Soc Psychol*. 1998. doi:10.1037/0022-3514.74.3.763

140. Chaze F, Robson K. In Control of Life Chances? Visible Minority Immigrants and Sense of Mastery. *J Immigr Refug Stud*. 2014. doi:10.1080/15562948.2013.816403

141. Cheney AM, Newkirk C, Rodriguez K, Montez A. Inequality and health among foreign-born latinos in rural borderland communities. *Soc Sci Med*. 2018. doi:10.1016/j.socscimed.2018.09.01

142. Campesino M, Schwartz GE. Spirituality among Latinas/os: Implications of culture in conceptualization and measurement. *Adv Nurs Sci*. 2006. doi:10.1097/00012272-200601000-00007

143. Turner RJ, Taylor J, Van Gundy K. Personal resources and depression in the transition to adulthood: ethnic comparisons. *J Health Soc Behav*. 2004. doi:10.1177/002214650404500103

144. Bisschop MI, Kriegsman DMW, Beekman ATF, Deeg DJH. Chronic diseases and depression: The modifying role of psychosocial resources. *Soc Sci Med*. 2004. doi:10.1016/j.socscimed.2003.11.038

145. López-Cevallos DF, Flórez KR, Derose KP. Examining the association between religiosity and medical mistrust among churchgoing Latinos in Long Beach, CA. *Transl Behav Med*. 2019. doi:10.1093/tbm/ibz151

146. Blair Wheaton. Models for the Stress-Buffering Functions of Coping Resources. *J Health Soc Behav*. 1985.

147. Viruell-Fuentes EA, Morenoff JD, Williams DR, House JS. Language of interview, self-rated health, and the other Latino health puzzle. *Am J Public Health*. 2011. doi:10.2105/AJPH.2009.175455

148. Brittian AS, Kim SY, Armenta BE, et al. Do dimensions of ethnic identity mediate the association between perceived ethnic group discrimination and depressive symptoms? *Cult Divers Ethn Minor Psychol*. 2015. doi:10.1037/a0037531

149. L. R. The CES-D scale: A self-report depression scale for research in the general population. *Appl Psychol Meas*. 1977;1(3):385-401. doi:10.1063/1.4932809

150. Vilagut G, Forero CG, Barbaglia G, Alonso J. Screening for depression in the general population with the center for epidemiologic studies depression (ces-d): A systematic review with meta-analysis. *PLoS One*. 2016;11(5):1-17. doi:10.1371/journal.pone.0155431

151. Turner RJ, Lloyd DA. The stress process and the social distribution of depression2688. *J Health Soc Behav*. 1999;40(4):374-404. doi:10.2307/2676332

152. Aneshensel CS. Mental Health Disparities. *J Health Soc Behav*. 2009;50:377-394. doi:10.2105/AJPH.2009.167346

153. U.S. Census Bureau. 2013-2017 American Community Survey 5-Year Estimates.

154. Pratt LA, Brody DJ. Depression in the U.S. household population, 2009-2012. *NCHS Data Brief*. 2014.

155. Nicholas MK, Coulston CM, Asghari A, Malhi GS. Depressive symptoms in patients with chronic pain. *Med J Aust*. 2009.

156. American Psychiatric Association. *American Psychiatric Association, 2013. Diagnostic and Statistical Manual of Mental Disorders (5th Ed.)*.; 2013. doi:10.1176/appi.books.9780890425596.744053

157. Rao U, Poland RE, Lin KM. Comparison of symptoms in African-American, Asian-American, Mexican-American and Non-Hispanic White patients with major depressive disorder. *Asian J Psychiatr*. 2012. doi:10.1016/j.ajp.2012.01.006

158. Ocampo JM. Self-rated health: Importance of use in elderly adults. *Colomb Med*. 2010.

159. Ware JE, Brook RH, Davies-Avery A. Conceptualization and measurement of health for adults in the Health Insurance Study: Vol. I, Model of health and methodology. *RAND REP*. 1980.

160. MADDOX GL. Some correlates of differences in self-assessment of health status among the elderly. *J Gerontol*. 1962. doi:10.1093/geronj/17.2.180

161. Mossey JM, Shapiro E. Self-rated health: a predictor of mortality among the elderly. *Am J Public Health*. 1982. doi:10.2105/AJPH.72.8.800

162. Benjamins MR, Hummer RA, Eberstein IW, Nam CB. Self-reported health and adult mortality risk: An analysis of cause-specific mortality. *Soc Sci Med*. 2004. doi:10.1016/j.socscimed.2003.01.001

163. Golding JM, Baezconde-Garbanati LA. Ethnicity, culture, and social resources. *Am J Community Psychol*. 1990. doi:10.1007/BF00938118

164. Gayman MD, Cislo AM, Goidel AR, Ueno K. SES and race-ethnic differences in the stress-buffering effects of coping resources among young adults. *Ethn Heal*. 2014;19(2):198-216. doi:10.1080/13557858.2013.828827

165. Alvirez D, Bean FD. The Mexican American family. In: *Interdisciplinary Perspectives on the New Immigration: Volume 4: The New Immigrant and the American Family*. ; 2014. doi:10.4324/9781315054209-17

166. Villatoro AP, Morales ES, Mays VM. Family culture in mental health help-seeking and utilization in a nationally representative sample of latinos in the United States: The NLAAS. *Am J Orthopsychiatry*. 2014;84(4):353-363. doi:10.1037/h0099844

167. Sarmiento IA, Cardemil E V. Family functioning and depression in low-income latino couples. *J Marital Fam Ther*. 2009. doi:10.1111/j.1752-0606.2009.00139.x

168. Miranda AO, Bilot JM, Peluso PR, Berman K, Van Meek LG. Latino Families: The Relevance of the Connection Among Acculturation, Family Dynamics, and Health for Family Counseling Research and Practice. *Fam J*. 2006;14(3):268-273. doi:10.1177/1066480706287805

169. Gallo LC, Penedo FJ, Espinosa De Los Monteros K, Arguelles W. Resiliency in the face of disadvantage: Do hispanic cultural characteristics protect health outcomes? *J Pers*. 2009. doi:10.1111/j.1467-6494.2009.00598.x

170. Miranda AO, Frevert VS, Kern RM. Lifestyle differences between bicultural low- and high-acculturation-level Latino adults. *J Individ Psychol*. 1998;54(1):119-134.

171. Sabogal F, Marín G, Otero-Sabogal R, Marín BVO, Perez-Stable EJ. Hispanic Familism and Acculturation: What Changes and What Doesn't? *Hisp J Behav Sci*. 1987. doi:10.1177/07399863870094003

172. Campos B, Ullman JB, Aguilera A, Dunkel Schetter C. Familism and psychological health: the intervening role of closeness and social support. *Cultur Divers Ethnic Minor Psychol*. 2014. doi:10.1037/a0034094

173. Medina-Inojosa J, Jean N, Cortes-Bergoderi M, Lopez-Jimenez F. The hispanic paradox in cardiovascular disease and total mortality. *Prog Cardiovasc Dis*. 2014. doi:10.1016/j.pcad.2014.09.001

174. Campos B, Schetter CD, Abdou CM, Hobel CJ, Glynn LM, Sandman CA. Familialism, Social Support, and Stress: Positive Implications for Pregnant Latinas. *Cult Divers Ethn Minor Psychol*. 2008. doi:10.1037/1099-9809.14.2.155

175. Schwartz SJ, Weisskirch RS, Hurley EA, et al. Communalism, familism, and filial piety: Are they birds of a collectivist feather? *Cult Divers Ethn Minor Psychol*. 2010. doi:10.1037/a0021370

176. Fuligni AJ, Telzer EH, Bower J, Irwin MR, Kiang L, Cole SW. Daily family assistance and inflammation among adolescents from Latin American and European backgrounds. *Brain Behav Immun*. 2009. doi:10.1016/j.bbi.2009.02.021

177. Koerner SS, Shirai Y. The negative impact of global perceptions of and daily care-related family conflict on Hispanic caregivers: Familism as a potential moderator. *Aging Ment Heal*. 2012. doi:10.1080/13607863.2011.638905

178. Almeida J, Molnar BE, Kawachi I, Subramanian S V. Ethnicity and nativity status as determinants of perceived social support: Testing the concept of familism. *Soc Sci Med*. 2009. doi:10.1016/j.socscimed.2009.02.029

179. Chang J, Chen CN, Alegría M. Contextualizing social support: Pathways to help seeking in Latinos, Asian Americans, and whites. *J Soc Clin Psychol*. 2014. doi:10.1521/jscp.2014.33.1.1

180. Mulvaney-Day NE, Alegría M, Sribney W. Social cohesion, social support, and health among Latinos in the United States. *Soc Sci Med*. 2007. doi:10.1016/j.socscimed.2006.08.030

181. Wakefield SEL, Poland B. Family, friend or foe? Critical reflections on the relevance and role of social capital in health promotion and community development. In: *Social Science and Medicine*. ; 2005. doi:10.1016/j.socscimed.2004.11.012

182. Fiori KL, Antonucci TC, Cortina KS. Social network typologies and mental health among older adults. *Journals Gerontol - Ser B Psychol Sci Soc Sci*. 2006. doi:10.1093/geronb/61.1.P25

183. Litwin H. Social network type and morale in old age. *Gerontologist*. 2001. doi:10.1093/geront/41.4.516

184. Soto S, Arredondo EM, Villodas MT, Elder JP, Quintanar E, Madanat H. Depression and Chronic Health Conditions Among Latinos: The Role of Social Networks. *J Immigr Minor Heal*. 2016. doi:10.1007/s10903-016-0378-2

185. Laveist TA, Isaac LA, Williams KP. Mistrust of health care organizations is associated with underutilization of health services. *Health Serv Res*. 2009. doi:10.1111/j.1475-6773.2009.01017.x

186. Dale SK, Bogart LM, Wagner GJ, Galvan FH, Klein DJ. Medical mistrust is related to lower longitudinal medication adherence among African-American males with HIV. *J Health Psychol*. 2016. doi:10.1177/1359105314551950

187. López-Cevallos DF, Harvey SM, Warren JT. Medical mistrust, perceived discrimination, and satisfaction with health care among young-adult rural Latinos. *J Rural Heal*. 2014. doi:10.1111/jrh.12063

188. Moore AD, Hamilton JB, Knafl GJ, et al. The influence of mistrust, racism, religious participation, and access to care on patient satisfaction for African American men: The North Carolina-Louisiana prostate cancer project. *J Natl Med Assoc*. 2013. doi:10.1016/S0027-9684(15)30086-9

189. Abraído-Lanza AF, Céspedes A, Daya S, Flórez KR, White K. Satisfaction with health care among Latinas. *J Health Care Poor Underserved*. 2011. doi:10.1353/hpu.2011.0042

190. Russell D, Peplau LA, Cutrona CE. The revised UCLA Loneliness Scale: Concurrent and discriminant validity evidence. *J Pers Soc Psychol*. 1980. doi:10.1037/0022-3514.39.3.472

191. Heinrich LM, Gullone E. The clinical significance of loneliness: A literature review. *Clin Psychol Rev*. 2006. doi:10.1016/j.cpr.2006.04.002

192. Chang EC, Sanna LJ, Hirsch JK, Jeglic EL. Loneliness and negative life events as predictors of hopelessness and suicidal behaviors in hispanics: Evidence for a diathesis-stress model. *J Clin Psychol*. 2010. doi:10.1002/jclp.20721

193. Gallegos ML, Segrin C. Exploring the Mediating Role of Loneliness in the Relationship Between Spirituality and Health: Implications for the Latino Health Paradox. *Psycholog Relig Spiritual*. 2018. doi:10.1037/rel0000180

194. Fiori KL, Smith J, Antonucci TC. Social network types among older adults: A multidimensional approach. *Journals Gerontol - Ser B Psychol Sci Soc Sci*. 2007;62(6):322-330. doi:10.1093/geronb/62.6.P322

195. Fiori KL, Jager J. The impact of social support networks on mental and physical health in the transition to older adulthood: A longitudinal, pattern-centered approach. *Int J Behav Dev*. 2012;36(2):117-129. doi:10.1177/0165025411424089

196. Fiori KL, Antonucci TC, Akiyama H. Profiles of social relations among older adults: A cross-cultural approach. *Ageing Soc*. 2008;28(2):203-231. doi:10.1017/S0144686X07006472

197. Turner RJ, Frankel BG, Levin DM. *Social Support: Conceptualisation, Measurement, and Implications for Mental Health*. Vol 3. Greenwich, CT: JAI Press; 1983.

198. Barrett AE, Turner RJ. Family structure and mental health: The mediating effects of socioeconomic status, family process, and social stress. *J Health Soc Behav*. 2005. doi:10.1177/002214650504600203

199. Olson DH, Portner J, Lavee Y. *FACES III*. Saint Paul: Department of Family Social Science University of Minnesota Press.; 1985.

200. Gil AG, Vega WA. Two different worlds: Acculturation stress and adaptation among Cuban and Nicaraguan families. *J Soc Pers Relat*. 1996. doi:10.1177/0265407596133008

201. Gil AG, Vega WA, Dimas JM. Acculturative stress and personal adjustment among hispanic adolescent boys. *J Community Psychol*. 1994. doi:10.1002/1520-6629(199401)22:1<43::AID-JCOP2290220106>3.0.CO;2-T

202. Gil AG, Wagner EF, Vega WA. Acculturation, familism, and alcohol use among Latino adolescent males: Longitudinal relations. *J Community Psychol*. 2000. doi:10.1002/1520-6629(200007)28:4<443::AID-JCOP6>3.0.CO;2-A

203. Smokowski PR, Rose R, Bacallao ML. Acculturation and latino family processes: How cultural involvement, biculturalism, and acculturation gaps influence family dynamics. *Fam Relat*. 2008. doi:10.1111/j.1741-3729.2008.00501.x

204. U.S. Department of Health and Human Services Office of Disease Prevention and Health Promotion. Physical Activity Guidelines for Americans. ODPHP Publication No. U0036. https://health.gov/paguidelines/2008/pdf/paguide.pdf. Published 2008. Accessed March 11, 2019.

205. Santini ZI, Fiori KL, Feeney J, Tyrovolas S, Haro JM, Koyanagi A. Social relationships, loneliness, and mental health among older men and women in Ireland: A prospective community-based study. *J Affect Disord*. 2016;204:59-69. doi:10.1016/j.jad.2016.06.032

206. Pew Research Center. *Cubans in the United States*.; 2006.

207. Noe-Bustamante L, Flores A, Shah S. *Facts on Hispanics of Cuban Origin in the United States, 2017*.; 2019. https://www.pewresearch.org/hispanic/fact-sheet/u-s-hispanics-facts-on-cuban-origin-latinos/.

208. Noe-Bustamente L, Flores A, Shah S. *Facts on Hispanics of Mexican Origin in the United States, 2017*.; 2019.

209. Rodriguez N, Paredes CL, Hagan JM. Immigration enforcement, older latino immigrants, and implications for health. In: *Contextualizing Health and Aging in the Americas: Effects of Space, Time and Place*. ; 2018. doi:10.1007/978-3-030-00584-9_6

210. Hatzenbuehler ML, Prins SJ, Flake M, et al. Immigration policies and mental health morbidity among Latinos: A state-level analysis. *Soc Sci Med*. 2017. doi:10.1016/j.socscimed.2016.11.040

211. Nichols VC, Lebrón AMW, Pedraza FI. Policing Us Sick: The Health of Latinos in an Era of Heightened Deportations and Racialized Policing. In: *PS - Political Science and Politics*. ; 2018. doi:10.1017/S1049096517002384

212. Pew Research Center. *Hispanics: A People in Motion*.; 2005. http://www.pewresearch.org/2005/01/20/trends-2005/.

213. Larson K, Mathews HF, Torres E, Lea CS. Responding to health and social needs of aging Latinos in new-growth communities: A qualitative study. *BMC Health Serv Res*. 2017. doi:10.1186/s12913-017-2551-2

214. Fred-Jiménez RM, Arroyo-Ávila M, Mayor ÁM, Ríos G, Vilá LM. Clinical Manifestations Associated with Overweight/Obesity in Puerto Ricans with Fibromyalgia Syndrome. *J Obes*. 2016;2016:1-7. doi:10.1155/2016/1379289

215. Folkman S, Lazarus RS. An analysis of coping in a middle-aged community sample. *J Health Soc Behav*. 1980. doi:10.2307/2136617

216. McGinnis JM, Williams-Russo P, Knickman JR. The case for more active policy attention to health promotion. *Health Aff*. 2002. doi:10.1377/hlthaff.21.2.78

217. Ensel WM, Lin N. Physical Fitness and the Stress Process. *J Community Psychol*. 2004. doi:10.1002/jcop.10079

218. Södergren M, Wang WC, Salmon J, Ball K, Crawford D, McNaughton SA. Predicting healthy lifestyle patterns among retirement age older adults in the WELL study: A latent class analysis of sex differences. *Maturitas*. 2014;77(1):41-46. doi:10.1016/j.maturitas.2013.09.010

219. Umberson D, Crosnoe R, Reczek C. Social Relationships and Health Behavior Across the Life Course. *Annu Rev Sociol*. 2010;36(1):139-157. doi:10.1146/annurev-soc-070308-120011

220. Penedo FJ, Dahn JR. Exercise and well-being: A review of mental and physical health benefits associated with physical activity. *Curr Opin Psychiatry*. 2005. doi:10.1097/00001504-200503000-00013

221. Ryan AM, Gee GC, Griffith D. The effects of perceived discrimination on diabetes management. *J Health Care Poor Underserved*. 2008. doi:10.1353/hpu.2008.0005

222. Warren GW, Alberg AJ, Kraft AS, Cummings KM. The 2014 Surgeon General's report: "the Health Consequences of Smoking-50 Years of Progress": A paradigm shift in cancer care. *Cancer*. 2014. doi:10.1002/cncr.28695

223. Stahre M, Roeber J, Kanny D, Brewer RD, Zhang X. Contribution of excessive alcohol consumption to deaths and years of potential life lost in the United States. *Prev Chronic Dis*. 2014. doi:10.5888/pcd11.130293

224. Abraido-Lanza A, White K, Armbrister A, Link B. Health status, activity limitations, and disability in work and housework among Latinos and non-Latinos with arthritis: An analysis of national data. *Arthritis Rheum Care Res*. 2006;55(3):442-450. doi:10.1002/art.21981

225. Culica D, Rohrer J, Ward M, Hilsenrath P, Pomrehn P. Medical checkups: Who does not get them? *Am J Public Health*. 2002;92(1):88-91. doi:10.2105/AJPH.92.1.88

226. Kendzor DE, Businelle MS, Reitzel LR, et al. Everyday discrimination is associated with nicotine dependence among African American, Latino, and White smokers. *Nicotine Tob Res*. 2014. doi:10.1093/ntr/ntt198

227. Green AI. Health and sexual status In an urban gay enclave: An application of the stress process model. *J Health Soc Behav*. 2008. doi:10.1177/002214650804900405

228. Son J, Erno A, Shea DG, Femia EE, Zarit SH, Parris Stephens MA. The caregiver stress process and health outcomes. *J Aging Health*. 2007. doi:10.1177/0898264307308568

229. Watt RG, Heilmann A, Sabbah W, et al. Social relationships and health related behaviors among older US adults. *BMC Public Health*. 2014. doi:10.1186/1471-2458-14-533

230. Jiang L, Beals J, Zhang L, et al. Latent Class Analysis of Stages of Change for Multiple Health Behaviors: Results from the Special Diabetes Program for Indians Diabetes Prevention Program. *Prev Sci*. 2012;13(5):449-461. doi:10.1007/s11121-011-0272-z

231. Laska MN, Pasch KE, Lust K, Story M, Ehlinger E. Latent class analysis of lifestyle characteristics and health risk behaviors among college youth. *Prev Sci*. 2009;10(4):376-386. doi:10.1007/s11121-009-0140-2

232. Øvrum A. Socioeconomic status and lifestyle choices: Evidence from latent class analysis. *Health Econ*. 2011. doi:10.1002/hec.1662

233. Fish JN, Maier CA, Priest JB. Substance abuse treatment response in a latino sample: The influence of family conflict. *J Subst Abuse Treat*. 2015. doi:10.1016/j.jsat.2014.07.011

234. Héroux M, Janssen I, Lee D chul, Sui X, Hebert JR, Blair SN. Clustering of Unhealthy Behaviors in the Aerobics Center Longitudinal Study. *Prev Sci*. 2012. doi:10.1007/s11121-011-0255-0

235. Lanza ST, Collins LM, Lemmon DR, Schafer JL. PROC LCA: A SAS procedure for latent class analysis. *Struct Equ Model*. 2007. doi:10.1080/10705510701575602

236. Yang CC. Evaluating latent class analysis models in qualitative phenotype identification. *Comput Stat Data Anal*. 2006. doi:10.1016/j.csda.2004.11.004

237. Centers for Disease Control and Prevention. Adult Physical Inactivity Prevalence Maps by Race/Ethnicity. https://www.cdc.gov/physicalactivity/data/inactivity-prevalence-maps/index.html#hispanic. Published 2020.

238. Weaver GD, Kuo YF, Raji MA, et al. Pain and disability in older Mexican-American adults. *J Am Geriatr Soc*. 2009;57(6):992-999. doi:10.1111/j.1532-5415.2009.02263.x

239. Centers for Disease Control and Prevention. Hispanics/Latinos and Tobacco Use. 2019. https://www.cdc.gov/tobacco/disparities/hispanics-latinos/index.htm.

240. Nolen-Hoeksema S. Gender differences in risk factors and consequences for alcohol use and problems. *Clin Psychol Rev*. 2004. doi:10.1016/j.cpr.2004.08.003

241. Turner RJ, Wheaton B, Lloyd DA. The Epidemiology of Social Stress. *Am Sociol Rev*. 1995;60(1):104. doi:10.2307/2096348

242. Finch BK, Vega W a. Acculturation stress, social support, and self-rated health among Latinos in California. *J Immigr Health*. 2003;5(3):109-117. doi:10.1023/A:1023987717921

243. Adams SA, Matthews CE, Ebbeling CB, et al. The effect of social desirability and social approval on self-reports of physical activity. *Am J Epidemiol*. 2005. doi:10.1093/aje/kwi054

244. King BA, Jones CM, Baldwin GT, Briss PA. The EVALI and Youth Vaping Epidemics — Implications for Public Health. *N Engl J Med*. 2020. doi:10.1056/nejmp1916171

245. Gostin LO, Glasner AY. E-cigarettes, vaping, and youth. *JAMA - J Am Med Assoc*. 2014. doi:10.1001/jama.2014.7883

246. Morean ME, Kong G, Camenga DR, Cavallo DA, Simon P, Krishnan-Sarin S. Latent class analysis of current e-cigarette and other substance use in high school students. *Drug Alcohol Depend*. 2016. doi:10.1016/j.drugalcdep.2016.02.018

247. Bulut E, Gayman MD. Acculturation and Self-Rated Mental Health Among Latino and Asian Immigrants in the United States: A Latent Class Analysis. *J Immigr Minor Heal*. 2016;18(4):836-849. doi:10.1007/s10903-015-0258-1

248. Lanza ST, Flaherty BP, Collins LM. Latent Class and Latent Transition Analysis. In: *Handbook of Psychology*. ; 2003. doi:10.1002/0471264385.wei0226

249. Carleton RA, Esparza P, Thaxter PJ, Grant KE. Stress, religious coping resources, and depressive symptoms in an urban adolescent sample. *J Sci Study Relig*. 2008;47(1):113-121. doi:10.1111/j.1468-5906.2008.00395.x

250. Antonucci TC. Social Relations An Examination of Social Networks, Social Support. *Handb Psychol aging*. 2001.

251. Umberson D, Karas Montez J. Social Relationships and Health: A Flashpoint for Health Policy. *J Health Soc Behav*. 2010;51(1_suppl):S54-S66. doi:10.1177/0022146510383501

252. Moor I, Spallek J, Richter M. Explaining socioeconomic inequalities in self-rated health: A systematic review of the relative contribution of material, psychosocial and behavioural factors. *J Epidemiol Community Health*. 2017. doi:10.1136/jech-2016-207589

253. Caldwell TM, Rodgers B, Power C, Clark C, Stansfeld SA. Drinking histories of self-identified lifetime abstainers and occasional drinkers: Findings from the 1958 British Birth Cohort Study. *Alcohol Alcohol*. 2006. doi:10.1093/alcalc/agl088