MEJIA, YESENIA C. Ph.D. Developmental Cascades: Linking Depressive Symptoms and Academic Functioning in Mexican-American Youth. (2021)
Directed by Dr. Gabriela Livas Stein. 81 pp.

Latinx adolescents are at greatest risk for negative life outcomes. Particularly, inequities in both academic and mental health outcomes have been widely documented for Latinxs living in the United States (Alegría et al., 2015; Musu-Gillette et al., 2017). The current study sought to increase understanding of developmental cascades in a sample of 674 Mexican-American youth recruited from two California school districts. This study examined longitudinal effects linking academic functioning and depressive symptoms from 5th – 12th grade, and whether factors, such as racial and ethnic discrimination, nativity, and sex impact these links. This study tested several models to elucidate how academic functioning and depressive symptoms are associated across time, and considered how other factors may influence developmental cascade pathways across key developmental transition points for these youth. Results indicated that academic functioning and depressive symptoms were contemporaneously associated across most waves. However, contrary to hypotheses, no cross-lagged effects were found, and the shared risk variables were not consistently associated with either domain across time. Results highlight the importance of implementing interventions that focus on both academic and depressive components concurrently. They also point to the importance of considering moderators and mediators, such as cultural strengths and structural risks, in understanding the longitudinal links between academic functioning and depressive symptoms in Mexican American youth, and how these influence one another across time.

DEVELOPMENTAL CASCADES: LINKING DEPRESSIVE SYMPTOMS AND ACADEMIC

FUNCTIONING IN MEXICAN AMERICAN YOUTH

by

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A Dissertation

Submitted to

the Faculty of The Graduate School at

The University of North Carolina at Greensboro

in Partial Fulfillment

of the Requirements for the Degree

Doctor of Philosophy

Greensboro

2021

Approved by

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DEDICATION

To my family. I would not be where I am today without their unyielding support, love, and encouragement. I would like to thank my parents for encouraging me to pursue my dreams and for showing me the value of hard work and good work ethic. I would like to thank my siblings for always believing in me and teaching me the value of perseverance. I would like to thank my nieces, nephews, and younger cousins who always inspired me with their curiosity and motivated me continue to my education to show them they can also dream big. Most importantly, I would like to thank my husband, Elliott Gallardo, for being my number one fan, supporting me in more ways than I can count, lifting me up during tough moments, for sharing my dreams, and for his love and dedication. Finally, I am grateful to my daughter, Alessandra, who has brought immeasurable joy into my life and motivates me to continue working towards making this world a better place.

This dissertation written by YESENIA C. MEJIA has been approved by the following committee of the Faculty of The Graduate School at The University of North Carolina at Greensboro.

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June 3, 2021

Date of Acceptance by Committee

June 3, 2021

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ACKNOWLEDGEMENTS

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CHAPTER I: INTRODUCTION

Latinxs are currently the fastest growing ethnic group in the United States and are expected to comprise 29% of the population by 2050 (Pew Research Center, 2008). As of 2015, Latinxs of Mexican-origin account for 63.3% of the nation's Latinx population, the largest share of any origin group by far (Pew Research Center, 2017). The growing Latinx population holds important social, political, and cultural implications for the United States (U.S.) and the population at large. As such, research focusing on understanding risk and resilience processes that foster or hinder positive development and adaptation in this population is critical and timely. Ethnic minority adolescents are at greatest risk for negative life outcomes in virtually every domain of child adjustment (Coll et al., 1996). In particular, inequities in both academic and mental health outcomes have been widely documented for Latinx youth living in the United States. Throughout this paper, research on the larger Latinx population will be discussed and research specific to Mexican-origin population will be highlighted when available.

The National Center for Education Statistics (Musu-Gillette et al., 2017) reports that Latinx youth are not achieving academically at the same levels as their non-Latinx White counterparts across all stages of education. Unfortunately, ethnic minority and low-income youth are not as likely to have the same opportunities to learn in schools as other groups; thus, it is important to note that existing "achievement gaps" are often the result of "opportunity gaps" (Flores, 2007). In terms of disparities, Latinx youth

consistently score below their non-Latinx White peers beginning in preschool and continuing all the way through high school on the National Assessment of Education Progress exam, which measures student achievement nationally in the areas of arts, civics, economics, geography, mathematics, reading, writing, U.S. history, and science. Moreover, reports show that between 1992 and 2017 the White-Latinx achievement gap has not significantly improved and has remained consistent at about 20 points across subjects (Musu-Gillette et al., 2017). Additionally, when examining other academic outcomes, school dropout rates are significantly higher and undergraduate degree completion rates are significantly lower for this group. It is important to note that over the last 30 years the school dropout rate has decreased from 32% to 9% (11% for Mexican-origin youth), the overall high school completion rate has increased by almost 30%, and the number of bachelor degrees attained has more than doubled between 2003-2014 for Latinxs (Musu-Gillette et al., 2017). Although these represent notable improvements, more work is necessary to close the opportunity gap that remains. Latinxs continue to have the highest rate (35%) of not completing high school, low college enrollment rates (35%; 33% for Mexican-origin youth), and the lowest rate (15%; 10% for Mexican-origin youth) of completing a bachelor's degree by age 25 (Musu-Gillette et al., 2017; Ryan & Bauman, 2016). Although research points largely to non-academic variables, such as socioeconomic inequality, as the cause of these educational disparities, more studies are needed to examine specific factors contributing to these opportunity gaps. Nonetheless, the long-term consequences of academic opportunity gaps are clear and long-lasting, including lower salaries and fewer opportunities for upward mobility (Fry, 2004).

Along with academic inequities, Latinxs experience inequities in mental health outcomes, specifically related to depressive symptoms. Latinx adolescents experience depressive symptoms

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to a greater degree when compared to peers from other racial/ethnic groups (Kessler et al., 1994; Siegel et al., 1998; Twenge & Nolen-Hoeksema, 2002). Mexican-American youth have been found to be at higher risk for depression when compared to White and African American youth (Roberts et al., 1997), and have been found to experience higher rates of depression with impairment when compared to middle school students across various other ethnic groups (Roberts & Sobhan, 1992). Further, Latinx adolescents attempt suicide at higher rates than their non-Latinx peers (Alegría et al., 2008; Zayas et al., 2005), with some studies finding that Mexican-American youth report rates of suicidal ideation almost twice as high as those of their non-Latinx White counterparts (Roberts & Chen, 1995; Tortolero & Roberts, 2001). Other studies have found that even when Latinxs demonstrate similar or lower prevalence rates of depression in adolescence than their non-Latinx White counterparts, they are at elevated risk to develop chronic, persistent mood disorders in adulthood (Alegría et al., 2015; Breslau et al., 2005). This may be due to the heightened risks they experience over their lifetime, which include discrimination, social and environmental stressors (e.g., low socioeconomic status, exposure to violence), parental expectations, and issues involving cultural values and identity (Anderson & Mayes, 2010).

Despite the aforementioned inequities in academics and depressive symptoms, many Latinx youth are more resilient than would be expected given the stressors to which they are often exposed, and many demonstrate good mental health outcomes and are academically successful (Gonzales et al., 2004). Yet, much of the extant research has focused on developing and testing treatments and interventions, and few studies have focused on investigating the mechanisms that underlie racial and ethnic disparities and/or resilience in both mental health and academics for Latinx youth. It is well established in the literature that children and adolescents

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tend to experience internalizing problems in conjunction with academic problems (Flook et al., 2005; Maughan et al., 2003). Yet, few studies have examined how the two function in tandem and affect each other across time across all adolescents, and especially with Latinx youth. In order to better understand these mechanisms and reduce inequities for Latinxs in these domains, it is essential to approach this work through a developmental lens by examining cascading effects of depressive symptoms and academic functioning. Developmental cascade models examine how functioning in one domain at one point in time predicts and/or affects functioning in other domains at a later point in time (Masten et al., 2005). This work is particularly important for Latinxs given that these types of questions have not been explored integrating culturally embedded risk processes (e.g., racial and ethnic discrimination) with other risks.

This dissertation seeks to contribute to the literature by helping to build a new, overarching framework of the association between academic functioning and depressive symptoms in Mexican American youth. This will be the first study, to my knowledge, to examine academic functioning and depressive symptoms in a Latinx sample utilizing cascade models, providing a deeper understanding about how these evolve developmentally for these youth. This study will also test the effects of cultural and contextual factors (i.e., racial and ethnic discrimination, nativity, sex) that may play a role in the unfolding of these cascading effects.

Links Between Academic Functioning and Depressive Symptoms

Many scholars have attempted to understand the relation between academics and depression in children and adolescents. Most studies examine directional influences and overall find a negative association between various measures of academic functioning, such as achievement (often measured through standardized tests, school and self-reported grades, teacher ratings), and depressive symptoms (e.g., parent and self-report on measures assessing mood,

withdrawal, and somatic symptoms; Herman et al., 2008; Huang, 2015; Masten et al., 2005; Shahar et al., 2006; Ward et al., 2010). Other studies have assessed academic functioning in terms of academic competence, which typically assesses children's confidence to succeed academically; it is also often used interchangeably with achievement, as it is measured via achievement tests. These studies find that academic competence is related to declines in depressive symptoms across the elementary school years (Herman et al., 2007; Roeser et al., 2000), and that a decline in academic competence across time predicts higher levels of current internalizing symptoms (i.e., anxiety and depression; Chen et al., 1995; Cole et al., 1997; Kellam et al., 1994). One study in particular found that academic competence was predictive of internalizing symptoms up to 10 years later (Masten et al., 2005). Overall, the literature suggests that both objective and perceived academic difficulties are related to increases in internalizing symptoms (Chen et al., 1995; Cole et al., 1997; Kellam et al., 1994; Maughan et al., 2003). On the other hand, the evidence examining academic consequences of depressive symptoms is generally mixed. There are a few studies that demonstrate that depressive symptoms predict short-term, but serious declines in academic performance (Kellam et al., 1991; Roeser et al., 2000), as well as long-term educational achievement (Bardone et al., 1996). However, other studies do not find evidence for this association (Cole et al., 1996). Although some of these associations are well established, less is known about what initiates these negative relations and how they change across development.

To date, few studies have specifically examined the relation between academic functioning and depressive symptoms in Latinx youth, but those that have also find a negative association between the two in samples of both U.S. born (84% of sample; 62.4% Mexican-origin) youth (Zychinski & Polo, 2012) and non-U.S. born youth (77% of sample; 22% born in

Mexico; Alva & de los Reyes, 1999). Additionally, some studies have identified mediators and moderators for this relation. For example, one study found that academic self-efficacy (i.e., perceived academic ability) and a performance avoidance orientation (i.e., ensuring that others perceive one as capable) served as cognitive mediators in the relation between academic achievement and depressive symptoms in a sample of Latinx adolescents (Zychinkski & Polo, 2012). Although it is generally believed that academic difficulties come first and subsequently lead to depressive symptoms, the opposite may also be true, and unfortunately this relationship is not well understood and is understudied in the literature. In sum, there is a scarcity of research examining this association from childhood to adolescence (Ward et al., 2010), and studies examining direction of causality are lacking (Lundy et al., 2010), particularly when it comes to Latinx adolescents. Further, little is known about the mechanisms that underlie this relationship for Latinx youth, as studies examining bidirectional effects of these constructs jointly are lacking. Thus, employing developmental cascade models to examine the development of these domains across time is a crucial next step in helping to fill this gap in the literature.

Developmental Cascades Research

Developmental cascades research emerged as a result of great interest in understanding the processes through which functioning in one domain influences functioning in another over time, and sets the course of development for individuals (Masten et al., 2005). Masten & Cicchetti (2010) define the term *developmental cascades* as "the cumulative consequences for development of the many interactions and transactions occurring in developing systems that result in spreading effects across levels, among domains at the same level, and across different systems or generations" (p. 491). Developmental cascades models are unique in that they allow researchers to examine direct, unidirectional, bidirectional, and indirect effects through various

pathways to see how the course of development is altered at multiple levels, contexts, and across time. Studying cascade effects is a fruitful avenue for understanding why some problems in childhood result in problems in adulthood, while others do not. These studies can help explain comorbidity between disorders, and can help inform interventions that target mediating processes for change (Masten & Cicchetti, 2010).

This methodology may be key to understanding academic and mental health pathways for youth, especially given the critical developmental transitions that occur from childhood into adolescence and adulthood. Research shows that at about 8 years of age children experience cognitive changes that allow them to begin to make negative self-evaluations (Garber, 1992). These cognitive changes may allow youth to begin evaluating their academic performance early on and place them at risk for experiencing depression and other internalizing symptoms. However, several researchers posit that cognitive vulnerabilities for depression may not emerge until adolescence when children develop the capacity for more formal operational thought (Turner & Cole, 1994). Further, adolescence has been marked as a critical developmental period during which youth experience changes in physiology, social-cognitive abilities, social and familial demands, reorganization in relationships, and exploration of identity (Savin-Williams, 1990; Steinberg, 1987). The literature shows that these transitions can result in increased risk for mental health problems and academic difficulties. For example, studies show that rates of depression increase significantly during adolescence (Angold et al., 2002; Hankin et al., 1998; Rutter, 1991), and a decline in academic motivation during this period has also been well documented (Gottfried et al., 2001). Overall, developmental cascade research can inform, test, and improve theories of adaptation that are essential to understanding pathways of adjustment, psychopathology, and resilience (Masten & Ciccetti, 2010). Not only can this work help us

understand the relations that exist, but it is also one of the few methods that can elucidate the directionality, precedence, and effects of transitions and how these change across time.

Developmental Cascade Models of Academic Functioning and Internalizing Symptoms: Past Research

Although much research has utilized cross-sectional models to examine associations between different domains of child and adolescent functioning, few scholars have empirically tested the validity of developmental cascade models on psychopathology and academic functioning (Masten et al., 2005, Moilanen et al., 2010) together over time, and none to my knowledge have examined these with Latinx youth. The few that have, typically examine internalizing, externalizing, and academic outcomes in the same models (Ansary & Luthar, 2009; Masten et al., 2005; Masten & Ciccetti, 2010; Moilanen et al., 2010); however, this dissertation will focus on examining links between academic functioning and depressive symptoms, as these are areas where marked disparities are evident for Latinx youth. Extant research has identified three main models to explain how internalizing (i.e., depression and anxiety) and academics are related across time: the adjustment erosion model, the academic incompetence model, and the shared risk hypothesis (Moilanen et al., 2010). These models have yielded mixed results in majority White non-Latinx samples, with varying sample sizes and across age groups as described below.

Academic Incompetence Model

The academic incompetence model has the most support in the literature and posits that initial problems relating to academic functioning lead to or exacerbate internalizing symptoms at a later time (Moilanen et al., 2010). Several studies have found that, consistent with this hypothesis, prior negative performance in academics affects subsequent internalizing symptoms

both in childhood (Deighton et al., 2018; Moilanen et al., 2010; van Lier et al., 2012) and across

adolescence and young adulthood (Masten et al., 2005; Obradović et al., 2009) –although

Moilanen and colleagues (2010) did not find this effect in adolescence. Other studies have found

support for this model in mostly non-Latinx White samples, but only for girls (Panayiotou &

Humphrey, 2018; Verboom et al., 2014). In addition, in a sample of Canadian children, Weeks

and colleagues (2016) provide evidence for these cascades beginning in early childhood, finding

that lower academic competence at age 4-5 predicted greater internalizing at age 12 -13. Further,

in a study examining developmental cascades over a 20-year period, Masten and colleagues

(2005) found that initial externalizing problems in childhood impacted academic achievement by

adolescence, and in turn predicted internalizing problems in young adulthood. This suggests that

academic difficulties might come first and begin to surface in childhood, and eventually lead to

the development of internalizing symptoms (i.e., depression) later in adolescence. Then, the

combination of these difficulties may continue to cascade over time leading to further problems

in both domains in early adulthood and beyond. Although results are mixed for this model, it

yielded the most empirical support in the literature reviewed for understanding how depressive

symptoms and academics function across time through various age groups.

Adjustment Erosion Model

Another model proposed to explain how academics and depression are related across time

is the adjustment erosion model. This model hypothesizes that internalizing difficulties predict

later academic difficulties (Moilanen et al., 2010). The model proposes that internalizing

disorders lead to emotional distress negatively impacting cognitive function and preventing the

use of adaptive learning strategies, thereby reducing academic self-efficacy and impairing

academic performance (Maughan et al., 2003; Roeser et al., 2000). Several studies have provided

support for the adjustment erosion model. For example, Obradović and colleagues (2009) found that internalizing symptoms in childhood predict lower academic competence in adolescence, controlling for prior levels and concurrent correlations of competence and psychopathology. Deighton and colleagues (2018) also found support for this model, but only in the secondary school age children, and not the primary school age children in their sample. They found that internalizing symptoms at age 11-12 predicted academic competence 2 years later, and this effect was not found in the younger 8–9-year-old sample. These results suggest that for some children (perhaps children who do not experience academic difficulties in early childhood) a different pattern evolves. For these children, internalizing problems may begin in early adolescence, when cognitive abilities are more developed, and then lead to subsequent academic difficulties. On the other hand, several studies have not found a significant relation between internalizing symptoms and later academic achievement (Masten et al., 2005; Moilanen et al., 2010; Panayiotou & Humphrey, 2018; Vaillancourt et al., 2013; van Lier et al., 2012). Overall, the results for this model are mixed and warrant further exploration.

Shared Risk Hypothesis

Lastly, the model with the least amount of support in the literature is the shared risk hypothesis. This model suggests that the effects observed in the two models reviewed above can be explained by third variables, which affect and interact with multiple domains of development across time (Moilanen et al., 2010). Most often these third variables are operationalized as shared risk factors, which include socioeconomic status, parenting factors, and intellectual ability (Masten et al., 2005). This model is based on the assumption that the amalgamation of risk factors significantly increases the likelihood of negative outcomes, as it disrupts proximal developmental processes and increases allostatic load on the child (Evans et al., 2013). This type

of model captures the number of risk factors experienced, rather than the intensity of them, and this has been found to be a better predictor of developmental outcomes in some studies (Appleyard et al., 2005; Evans et al., 2013; Raviv et al., 2010). Although few studies have used the shared risk hypothesis as a model, the few that have yield mixed results. Several studies have found limited support (e.g., few new significant or no longer significant pathways) or no support for this model (Deighton et al., 2018, Masten et al., 2005; Moilanen et al., 2010; Panayiotou & Humphrey, 2018).

In summary, the extant literature seems to favor the academic incompetence model, which states that initial academic problems lead to depressive symptoms later in life. Limited support was found for either the adjustment erosion or for the shared risk hypothesis models. However, the current developmental cascades research exhibits several limitations. First, due to difficulties with recruitment and attrition, developmental cascades research typically includes samples of less than 300 participants (Ansary & Luthar, 2009; Englund & Siebenbruner, 2012; Masten et al., 2005; Moilanen et al., 2010; Obradović et al., 2009), which may be inadequate for the complex (e.g., multiple path, nested models) analyses that need to be carried out (Masten, et al., 2005). In addition, the few studies that have utilized larger samples have been conducted in the United Kingdom (Deighton et al., 2018; Panayiotou & Humphrey, 2018), Canada (Vaillancourt et al., 2013; van Lier et al., 2012; Weeks et al., 2016) and The Netherlands (Verboom et al., 2014). There is only one large sample study that has been conducted in the United States (Burt & Roisman, 2010) and it was not nationally representative of the population at large, and thus, not generalizable. In fact, all studies reviewed above have been conducted with majority non-Latinx White samples. Currently, there are no studies that include large enough ethnic minority samples to be able to examine differences across groups, and very few

included any Latinx youth at all, with no studies including more than 3% Latinxs in their sample. Given the importance of the cultural context in the developmental environment, it cannot be assumed that these findings will be generalizable to ethnic minority youth (Bronfenbrenner, 2005); thus, more studies examining developmental cascades within large ethnic minority samples are needed.

Second, most studies examining developmental cascades examine only 3 time points across short developmental periods (e.g., 3-4 years), either in early childhood or adolescence, and few bridge across key developmental transitions. The few studies that do examine cascades across longer periods (e.g., 20 years) tend to do so across very long intervals (e.g., every 5-10 years) between assessment waves. These designs pose issues, as the studies examining short developmental periods cannot provide information about how functioning in childhood may affect functioning in adolescence and into early adulthood. On the other hand, the studies examining long developmental periods may not capture important cascade processes occurring in between. For example, some scholars posit that internalizing symptoms may have a shorter window of influence, which would not be captured by the longer lapses in assessment present in some studies (Masten et al., 2005). Timing is key in understanding cascade processes given that negative cognitive styles develop during the transition from childhood to adolescence when children develop the capability for formal operational thought and abstract reasoning (Turner & Cole, 1994). It is during this time that youth experience changes in individual, interpersonal, and setting level dynamics (Hughes et al., 2016). These changes coupled with their advanced cognitive abilities allow them to recognize and reflect upon how they may be perceived in society, allow exploration of identity that becomes increasingly salient, and it is during this developmental stage that youth begin to expand the social worlds in which they operate (Hughes

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et al., 2016). Thus, future research needs to account for key developmental transitions (e.g., early childhood to adolescence to young adulthood) using shorter intervals between assessments across longer periods of time in order to capture these more nuanced processes. Extant research would suggest that academic difficulties are most evident in the early to late childhood years, and as children develop capacity for making more self-evaluations (in early to middle adolescence) depressive symptoms come about and then predict both subsequent depressive symptoms and academic functioning more significantly. Potentially, these cascading effects are more evident at the key developmental transitions described above, making academic cascade effects more pronounced during the transition from elementary school to middle school, and internalizing cascade effects more pronounced during the transition from middle school to high school.

Third, few scholars have examined shared variables that may be accounting for the cascade effects observed. The most common shared risk variables included in developmental cascade models are socioeconomic status, parenting quality, cognitive ability, and special needs status (Deighton et al., 2018; Masten et al., 2005; Moilanen et al., 2010; Panayiotou & Humphrey, 2018; Weeks et al., 2016). Few others have controlled for social competence (Burt & Roisman, 2010; Obradović et al., 2009; Verboom et al., 2014), peer victimization (Vaillancourt et al., 2013; van Lier et al., 2012), and substance use (Ansary & Luthar, 2009; England & Siebenbruner, 2012). Including shared risk variables is important in developmental cascades research because it allows for examination of factors that may promote or disrupt cascades processes. For example, these models do not account for cultural and contextual factors (e.g., race/ethnicity, sex, racial and ethnic discrimination) known to influence Latinx youth's cognitive and emotional developmental competencies. Including shared risk variables becomes increasingly important when exploring cascades in ethnic minority samples, as it has been well

established that unique risks and promotive factors affect both academic functioning and depression in these populations (Coll et al., 1996). These factors may have significant influence in when cascades begin and how they unfold differentially in Latinx youth.

Despite these limitations developmental cascade research has been important in beginning to identify positive and negative youth pathways of academic functioning and depressive symptoms. It is essential to extend this work to Latinx youth in order to help address the well-documented academic and mental health inequities that they experience. It is possible that we may see different developmental cascades in this population given that they are exposed to different types and increased risks than their non-Latinx White counterparts. Additionally, models need to include other factors that pose risk for depression and poor academic functioning across time. Research shows that these risks often result in the process of "weathering," which suggests that the effects of multiple risk factors that disproportionately affect minorities accumulate overtime and result in the disparities observed (Gee & Payne-Sturges, 2004). This dissertation addresses the limitations discussed above and extends this line of work by being the first, to my knowledge, to examine cascade models of academic functioning and depressive symptoms in a large Mexican American sample, by considering cascade effects from late childhood to late adolescence (5th -12th grade), and by considering the role of shared risk factors, such as racial and ethnic discrimination, sex, and nativity in any cascade effects observed.

Considerations from Models of Ethnic Minority Development

In order to better understand the risk factors associated with Latinx youth and incorporate them into developmental cascades models, it is essential to draw from ethnic minority development models. Scholars have drawn attention to the absence of longitudinal studies examining the normative development of ethnic minority children, as well as the focus on

outcomes rather than processes when conducting research with these groups (Coll et al., 1996). Although research suggests that individual primary developmental processes operate similarly for ethnic minority children and non-Latinx White children, it is important to consider the unique ecological circumstances (i.e., diverse psychological attributes, contexts specific to daily experiences, racial and ethnic values, and societal structures) that influence normal developmental processes in these children (Coll et al., 1996). According to the Integrative Model for the Study of Developmental Competencies in Minority Children, a culturally embedded model should consider both constructs that are salient specifically to Latinx youth that contribute uniquely to their developmental processes, and constructs that are salient to other populations as well, but may function differently based on individual factors that affect developmental processes. Similarly, Beale Spencer and colleagues (2015) propose an identity-focused, cultural-ecological perspective on the Phenomenological Variant of Ecological Systems Theory (PVEST). The PVEST model is used to examine normative development through the interaction of culture, identity, and experiences as they are interconnected with maturational processes (Beale Spencer et al., 2015). According to Beale Spencer and colleagues (2015), "the model aims to capture the individual's intersubjectivity and meaning-making processes in light of tangible experiences, which are determined by the proximal and distal contexts of development" (p. 640-641). This model posits that the combination of macro and micro-contextual influences, normative developmental processes, salient interpersonal relationships, and cognition-based perceptions help youth form their identity, which then leads to positive or negative adaptation (Beale Spencer et al., 2015). From this perspective, examining how ethnic minority children and adolescents comprehend and make meaning of their circumstances (e.g., academic performance)

and experiences (e.g., racial and ethnic discrimination) is central to understanding risk and resilience processes in these youth (Spencer et al., 2003).

Taken together, these models provide a framework for incorporating culturally relevant contexts and factors into developmental cascades models for Latinx youth. They elucidate the importance of considering unique factors that affect pathways for Latinx youth, and how these affect their development across time. There is ample research delineating the negative effects of social position variables, such as social class, race, and ethnicity on both psychological well-being and academic functioning of Latinx youth (Coll et al., 1996). However, less is known about how cultural contexts and factors (i.e., experiences of racial and ethnic discrimination, sex, and nativity) interconnect with developmental processes to produce resilient or adverse outcomes overtime. This piece is essential in understanding developmental cascade pathways of academic functioning and depressive symptoms for Latinx youth. There is evidence in the literature that cultural factors influence both academics and depressive symptoms in Latinx youth, and help explain positive and negative outcomes in these domains. For Latinx youth, cognitions surrounding academics and psychopathology are shaped in part by their cultural experiences, and may uniquely affect the developmental cascade pathways in these domains. In fact, there is some literature that suggests that for Latinx college students, cognitive development intersects with racial and ethnic identity development (Shaw, 2001). In a similar vein, Taylor (2016) proposes that for ethnic minority youth cognitive development is driven by complex interactions between their context and community, which play a key role in meaning-making processes. Specifically, cultural experiences, such as racial and ethnic discrimination, gender stereotypes and expectations, and immigration status may have unique influence on depressive symptoms and academic functioning, which may result in negative developmental cascades. Thus, this study

will add to the extant literature by examining linkages in depressive and academic pathways across time, and by testing whether racial and ethnic discrimination, sex, and nativity may influence these pathways for Latinx youth.

Shared Risk Factors for Latinx Youth

Consistent with past research using developmental cascade models, the proposed dissertation will examine the effects of several factors that are jointly associated with academic functioning and depressive symptoms in Latinx youth: sex, nativity (born in Mexico or born in the U.S.), and racial and ethnic discrimination.

Sex differences in academic functioning and depressive symptoms have been well documented in the literature for Latinx youth. For example, Latinx girls tend to report significantly higher levels of academic motivation (Plunkett & Bámaca-Gomez, 2003; 100% Mexican-origin), higher grades (Cupito et al., 2015) than Latinx boys, and Latinx males tend to have higher rates of high school dropout (13% vs. 9% for females) and lower rates of college enrollment (43% vs. 57% for females; Musu-Gillette et al., 2017). Further, sex differences are also found in reports of depressive symptoms. Studies find that Latinx girls tend to report higher rates of depressive symptoms than Latinx boys (Saluja et al., 2004; Siegel et al., 1998). Finally, the effects of sex have also been found in developmental cascade analyses. For example, one study found support for the academic incompetence model only for girls, not boys (Panayiotou & Humphrey, 2018), while another found support for an adjustment erosion pathway only for boys, and for an academic incompetence pathway to internalizing symptoms only for girls (Deighton et al., 2018). Thus, it is possible that the links between academic functioning and depressive symptoms may be stronger for girls, and this may be especially true for the current sample given the divergent gender socialization experiences of boys and girls in Latinx families. Further, it is

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possible that differential patterns of cascade effects will be observed, such that the academic incompetence model will be evident for girls, while the adjustment erosion model will emerge for boys.

Another factor that might play a role in both academic and depressive pathways for Latinx youth is nativity. Many studies have found support for the immigrant paradox, where U.S.-born youth (more acculturated) have less optimal outcomes than newly arrived immigrant youth, even after controlling for factors such as income and parent education levels (Marks et al., 2014). Studies find that U.S.-born Latinxs are at significantly higher risk than immigrant Latinxs for depressive disorders, and more specifically, Mexican immigrants report significantly lower prevalence of major depressive episodes and any depressive disorders (Alegría et al., 2008). Similar findings can be seen with academic functioning. U.S.-born Latinxs have significantly higher high school dropout rates (21%) than immigrant Latinxs (8%; Musu-Gillette et al., 2017). Additionally, more acculturated Latinx students tend to report lower academic aspirations and less academic motivation (Fuligni, 2001; Suárez-Orozco & Suárez-Orozco, 1995). Taken together, these studies suggest that links between academics and depressive symptoms may be less pronounced for the Mexican-born youth in the sample than the U.S.-born youth. Further, we may see similar cascade patterns for both; however, these may arise later in development for the Mexican-born youth, as initial immigrant optimism may be protective early on, but diminish as youth acculturate to mainstream U.S. culture and begin to encounter more risks.

Lastly, some scholars suggest that the mental health and academic disparities found for Latinx youth are in part due to the experiences of racial and ethnic discrimination. Discrimination refers to the daily hassles, such as negative stereotypes, prejudiced comments, and negative actions towards individuals due to their ethnic group membership, that occur due to

the lower status ascribed to minority groups in the U.S. (Sellers & Shelton, 2003). Latinx youth experience discrimination based on their English language fluency, immigration status, poverty, and skin color, among many other factors, and these discriminatory behaviors are frequently delivered from peers, teachers, and other members of society across the lifespan (Edwards & Romero, 2008). Ethnic minority models of child development highlight the negative effects of discrimination on developmental outcomes and the importance of understanding how these experiences influence these outcomes across time (Coll et al., 1996). Further, longitudinal studies have found that discrimination is negatively associated with both depressive symptoms (Romero & Roberts, 2003; Szalacha et al., 2003) and academic functioning (Benner & Graham, 2011). Studies have found that discrimination at various ages is predictive of subsequent depressive symptoms. When examining these across time in samples of Mexican American youth, studies have found that greater experiences of peer discrimination in 5th grade are predictive of greater depressive symptoms in 7th (Nair et al., 2013) and 12th (Stein et al., 2019a; this sample) grades. Higher levels of discrimination in early adolescence have also been associated with higher initial levels of depressive symptoms (Delgado et al., 2011; Delgado et al., 2017). Similarly, discrimination has also been associated with poor academic functioning among Latinx youth. Discrimination predicts lower grade point average (Huynh & Fuligni, 2010), and decreases in self-efficacy and grades in general (Fisher et al., 2000). Studies looking at the impact of discrimination longitudinally show that higher levels of discrimination and increases in discrimination across time has effects on Latinx adolescents' grades and school absences, indirectly via their influences on perceptions of school climate (Benner & Graham, 2011). Thus, discrimination may influence the developmental cascades observed, such that experiences of discrimination may amplify cascade effects, making the associations stronger across the sample.

In sum, the literature suggests we may see differential expression of academic and depressive pathways for Latinx boys and girls, and for U.S.-born and Mexican-born youth. Further, Latinxs begin to experience racial and ethnic discrimination in early childhood and this seems to lead to depressive symptoms overtime; thus, we might expect that experiences of discrimination might initiate more pervasive negative depressive and thus, negative academic cascades earlier on.

Goals and Hypotheses

The goal of the present study was to better understand how academic functioning and depressive symptoms are associated across time in a Mexican-American sample. This study aimed to test for cascading effects among academic functioning and depressive symptoms, and examine whether shared risk factors (i.e., sex, nativity, and racial and ethnic discrimination) relevant to Mexican-American youth and common to the two child functioning domains accounted for cascading effects. This study also aimed to extend current work in this area by including a focus on the period between elementary school and high school, which allowed for investigation into how cascading effects may differ across late childhood and early adolescence and middle to late adolescence. A series of 3 nested models were tested (see Figure 1).

The hypotheses were as follows:

Hypothesis 1: It was hypothesized that analyses would reveal evidence of cascading effects, specifically that academic difficulties would lead to internalizing symptoms, and in turn, worse academic functioning across time. In other words, it was expected that the academic incompetence model would be supported over the adjustment erosion model.

Hypothesis 2: It was also hypothesized that academic difficulties would begin in childhood and lead to depressive symptoms in adolescence, leading to further academic difficulties and depressive symptoms over time.

Hypothesis 3: Finally, it was expected that the shared risk variables (i.e., sex, nativity, and racial and ethnic discrimination) would attenuate, but not fully account for cascading effects observed. It was expected that the developmental cascade effects would vary across sex, nativity, and discrimination, such that boys, U.S.-born youth, and those experiencing higher levels of discrimination would demonstrate higher levels of academic difficulties and in turn, higher levels of depressive symptoms. It was expected that inclusion of these variables would demonstrate that some developmental cascades would be at least partially attributable to sex, nativity, or racial and ethnic discrimination and would significantly improve model fit; however, the predictions as to whether these would have a substantive impact on the statistical significance, direction, or magnitude of the cascade paths was more tentative as this has not yet been tested in the literature.

CHAPTER II: METHODS

Participants

This study used data from the California Families Project (CFP), which was granted approval by the University of California at Davis Institutional Review Board (Protocol # 217484-21. Participants included 674 Mexican origin families with a youth attending the 5th grade at wave 1. The children were drawn at random from rosters of students from the Sacramento and Woodland, California school districts (83 different elementary schools). The Sacramento school district served a high percentage of low-income students (64-71% of students were eligible for free or reduced lunch) and a diverse ethnic demographic (32-36% Hispanic, 18-21% White, 18-21% Asian, 18-21% African American, 5-9% other; DataQuest, 2013). The Woodland school district similarly served a high percentage of low-income students (49-63% of students were eligible for free or reduced lunch) and a diverse ethnic demographic (57-63% Hispanic, 28-33% White, 5% Asian, 1% African American, 3-6% other; DataQuest, 2013). The children (50% female) were assessed annually from 5th (*Mage* at wave 1 = 10.86, *SD* = 0.50) through 12th grade (*Mage* at wave 8 = 17.73, *SD* = 0.52). To be eligible, the focal child had to be living with his or her biological mother, in the 5th grade, and of Mexican origin.

Procedure

Data collection occurred from 2006 to 2015 for the waves in the present study. Families were recruited by telephone or by a recruiter who went to their home, for those

without a listed phone number. Of the eligible families, 72.5% agreed to participate the study. Study participants were interviewed in their homes using laptop computers by trained bilingual research staff (most of Mexican heritage). Interviewers underwent two weeks of training and supervision in the field by an interview coordinator. Interviews were conducted in English or Spanish based on participant preference.

Measures

Demographics. Analyses included years of residence in the U.S. (if born in Mexico) and income as control variables for the key outcomes in the study, as well as included sex and nativity (born in the U.S. or born in Mexico) in the shared risk analyses. Family income was reported by mothers in the first wave of data collection using a 20-point scale with $5,000 increments (range = $5,000 - $95,000). Percapita income was then calculated based on number of people living in the household. Participants had a mean family income of $30,000-$35,000, (*SD* = $15,000-$20,000) and a mean percapita income of $6,841 (*SD* = $5,283). 50% of youth were female, 69.7% of youth were U.S. born (2nd generation), and those who were born in Mexico had been living in the U.S. for an average of 14.86 years at wave 7.

Depressive Symptoms. Depressive symptoms were assessed via child report of the Major Depression Disorder (MDD, 256 items/22 symptoms) portion of the Mood Disorders section from the National Institute of Mental Health (NIMH) Diagnostic Interview Schedule for Children-IV (DISC-IV), a commonly used measure that assesses 30 different psychiatric diagnoses for children and adolescents (Shaffer et al., 2000). This measure has been validated in both English and Spanish. Children reported whether they had experienced a symptom within the past year (0 = no, 1 = yes). Symptom counts variables were calculated for MDD per wave (Stein et al., 2019a).

Academic Functioning. Three measures of academic functioning were initially proposed to estimate a single academic functioning latent variable. This study proposed to use youth self-report and mother report of academic performance on a 5-point scale ($1 = F$ and $5 = A$), and a composite of children's scores on the California Standards Tests (Math, Science, ELA). However, when the measurement model for this academic functioning latent variable was tested, the model did not converge. Thus, the current study used only the youth self-report of academic performance as a single academic functioning variable. This variable was selected as several studies have found that grades are most accurate in predicting academic achievement than any other factor, and youth are likely to have more accurate reports of grades than parents (Camara & Echternacht, 2000; Fleming, 2002; Hoffman, 2002; Zheng et al., 2002).

Racial and Ethnic Discrimination. Perceptions of discrimination were assessed using a 19-item measure with two subscales: Perceptions of General Racism, and Personal Experiences with Prejudice and Discrimination (Hughes & Dodge, 1997; Johnston & Delgado, 2004; Klonoff & Landrine, 1995). Each subscale has four domains: Teachers, Peers at school, Neighborhood, and Strangers. Adolescents were asked to report on perceptions of discrimination against their racial/ethnic group in general as well as their experiences with prejudice and discrimination directed at them on a 4-point scale ($1 = $ *Almost never or never* and $4 = $ *Almost always or always*). Reliability for the current study was adequate ($\alpha = .65$).

Statistical Analyses

Analyses for this study used Structural Equation Modeling (SEM) that was carried out with Mplus, Version 8.2 (Muthén & Muthén, 2018). First, all variables used to form the cascade constructs and the control variables were screened for normality. A robust maximum likelihood (MLR) estimator was employed to account for nonnormality. Missing data was accounted for by

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using Full Information Maximum Likelihood (FIML). Common model fit indices reported include: (a) comparative fit index (CFI), (b) Tucker–Lewis index (TLI), and root mean square error of approximation (RMSEA). However, the relative fit of the proposed nested models was evaluated primarily based on a scaled chi-square difference test, using adjusted chi-square values based on an algorithm for nonnormal data (Satorra, 2000). Each of the more parsimonious models was compared with the next most complex model.

Cascade Analyses

Masten and colleagues' (2005) overall analytic strategy was followed. A series of theoretically determined nested models were evaluated to determine whether the adjustment erosion or academic incompetence hypotheses were supported (see Table 1 for an example of these models across 4 waves of data). A random intercept cross-lagged panel model (RI- CLPM) was proposed to better understand both between- and within-person change processes (Hamaker et al., 2015). This model accounts for trait-like, time-invariant stability of constructs through the inclusion of a random intercept (i.e., a factor with all loadings constrained to 1). However, this model did not converge to the data, suggesting it may be too complex for the typical multi-wave panel design used in psychological research (Orth et al., 2021). Given past cascade models have focused on fewer waves of data, a cascade model with only the first 3 waves of data was tested; however, this model also did not converge. Thus, a cross-lagged panel model (CLMP), which focuses on between-person change processes was used (Orth et al., 2021). Using the CLPM, the first model evaluated each construct's stability and contemporaneous correlations across the two factors (i.e., academic functioning, depressive symptoms). This model provided the basis for all other nested models. All the remaining models had the same structure as the first model, but also added diagonal-directed arrows specifying various types of cascade effects. Thus, the first model

was the most parsimonious and the third model was the least parsimonious. The second model added cross-domain paths to the basic continuity model, representing the academic incompetence hypothesis, and the third model added an additional cross-domain path representing the adjustment erosion hypothesis.

Shared Risk Variable Analyses

As done by Masten (2005) and Moilanen (2010) and colleagues, once the best-fitting cascade model is selected, if significant cascade paths are identified, a separate model evaluating the shared risk hypothesis is estimated. The 3 shared risk variables are embedded in the model to create spurious association models to test whether significant cascade paths would persist when these are introduced into the model (see Figure 2 for an example of such a model for one cascade path). The three shared risk factor variables are simultaneously regressed upon Time 1 academic functioning and depressive symptoms, as are their indirect effects via any cascade pathways revealed in the previous stage of modeling. The presence of significant indirect effects would indicate that a particular developmental cascade is at least partially attributable to sex, nativity, or racial and ethnic discrimination. Bootstrapping is employed in this analysis to estimate the standard errors and 95% bias-corrected confidence intervals of these coefficients (McCartney & Burchinal, 2006).

CHAPTER III: RESULTS

Preliminary Analyses

Prior to conducting the cascade analyses, all variables used were screened for normality. Descriptive statistics demonstrated that variables were normally distributed and within acceptable limits of skewness and kurtosis. Descriptive statistics for all study variables are presented in Table 2. Results indicated that youth in this sample had B-C average letter grades (M=3.73-4.11) across the 8 waves and reported relatively low depressive symptoms (M = 2.96 – 5.50). Additionally, they reported low levels of discrimination (M = 1.57, SD = .293).

There were several significant correlations amongst study variables. Bivariate correlations for all study variables are presented in Table 3. Overall, these suggested moderate stability of the two longitudinal constructs (academic functioning r range = .16-.50; depressive symptoms r range = .20-.59). There was little evidence for potential cross-lagged pathways, as academic functioning was not significantly correlated with subsequent depressive symptoms or vice versa, except for significant correlations between wave 7 depressive symptoms and wave 8 academic functioning (r = -.10), and wave 3 academic functioning and wave 4 depressive symptoms (r = -.10). Thus, lower grades at wave 3 were associated with higher depressive symptoms at wave 4, and higher depressive symptoms at wave 7 were associated with lower academic functioning at wave 8. Further, correlations between contemporaneous academic functioning and depressive

symptom scores were low (*r* range = -.09 to -.16) and were not significantly correlated at waves 1 and 7.

There were also significant correlations between control and shared risk variables, and cascade variables. Income was significantly positively correlated with academic functioning at waves 2 (*r* = .15), 4 (*r* = .09), and 6 (*r* = .15), such that higher income was associated with higher academic functioning, and negatively correlated with depressive symptoms only at wave 4 (*r* = -.11), such that higher income was associated with lower depressive symptoms. The number of years youth lived in the U.S. was significantly negatively correlated with academic functioning at waves 3 (*r* = -.12), 4 (*r* = -.18), 5 (*r* = -.15), 7 (*r* = -.14), and 8 (*r* = -.09), such that more years lived in the U.S. was associated with lower academic functioning, and significantly positively correlated with depressive symptoms at waves 6 (*r* = .13) and 8 (*r* = .11), such that more years lived in the U.S. was associated with higher depressive symptoms. Sex was significantly correlated with academic functioning at waves 3 (*r* = -.19), 5 (*r* = -.10), 6 (*r* = -.10), 7 (*r* = -.13), and 8 (*r* = -.09), and with depressive symptoms at waves 4 (*r* = -.25), 5 (*r* = -.27), 6 (*r* = -.26), 7 (*r* = -.23), and 8 (*r* = -.22), such that being female was associated with higher academic functioning and higher depressive symptoms. Nativity was significantly negatively correlated with academic functioning at wave 4 (*r* = -.13) and positively correlated with depressive symptoms at wave 8 (*r* = .08), such that being first generation was associated with higher academic functioning at wave 4 and lower depressive symptoms at wave 8. Finally, discrimination at wave 1 was significantly positively correlated with depressive symptoms at waves 1 (*r* = .22) and 2 (*r* = .21), such that higher discrimination at wave 1 was associated with higher depressive symptoms at waves 1 and 2. Discrimination was not significantly correlated with academic functioning at any wave.

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Cascade Analyses

Table 4 shows the results for relative and absolute model fit for the cascade analyses. The SRMR and CFI values indicate that all models had acceptable fit. The results for relative fit are in the left-hand columns of Table 4. The c coefficient in the table is the scaling constant used in the chi-square difference tests (Satorra, 2000). When the chi-square difference test is significant, the more parsimonious model is rejected in favor of the model with more parameters. The chi-square difference tests show that Model 2 fits significantly better than Model 1, but fits equally well as Model 3. Thus, these results argue for the adoption of Model 2 as the most plausible model among those tested. Figure 3 displays the standardized path coefficients for the significant paths of Model 2 and shows that all the continuity paths were positive and significant ($p < .05$). On average, the stabilities were slightly higher for depressive symptoms, which ranged from .36 to .53, than for academic functioning, which ranged from .22 to .47. None of the directed cascade paths were significant. Path coefficients (and standard errors) for all the cascade paths included in Model 2 are provided in Table 5. Given that none of the cascade paths in the model were significant, the shared risk analyses were not estimated.

Post Hoc Analyses

Given that no significant cascade paths were identified, and only contemporaneous relations were found between academic functioning and depressive symptoms, a post hoc question of this study was to understand how academic functioning, depressive symptoms, and the shared risk and control variables are associated cross-sectionally. To test this question two separate multiple regression models using data from wave 1 were conducted in IBM SPSS Statistics (Version 27) predictive analysis software. The first model tested whether depressive symptoms, and control and shared risk variables, significantly predicted academic functioning.

The second model tested whether academic functioning, and control and shared risk variables, significantly predicted depressive symptoms.

Results revealed that neither depressive symptoms [β (B) = -.106 (-.021), p = .280], nor any of the other control [income: β (B) = .145(2.29E-5), p = .139; years in U.S.: β (B) = .272 (.082), p = .06] or shared risk variables [nativity: β (B) = -.210 (-.407), p = .143; sex: β (B) = -.094 (-.165), p = .323; discrimination: β (B) = .071 (.216), p = .458] were significantly associated with academic functioning at wave 1. Further, neither academic functioning [β (B) = -.099 (-.488), p = .280] nor any of the other control [income: β (B) = -.059 (-4.61E-5), p = .536; years in U.S.: β (B) = .222 (.333), p = .113] or shared risk variables [nativity: β (B) = .051 (.487), p = .715; discrimination: β (B) = .173 (2.596), p = .060] were significantly associated with depressive symptoms at wave 1, except for sex [β (B) = -.196 (-1.707), p < .05]. Specifically, being male was associated with a decrease of 1.71 in depressive symptoms, holding all other variables constant.

Given the differences by sex observed in this analysis and study correlations, a post hoc analysis of the cascade model (Model 2) was conducted separately for males and females to identify whether a different pattern of results would emerge for each. Results revealed no significant cascade paths for the females in the study. On the other hand, one significant pathway emerged for the males: academic functioning at wave 7 was negatively associated with depressive symptoms at wave 8, such that lower grades at wave 7 predicted higher depressive symptoms at wave 8 [β (B)= -.164 (-.061), p < .05].

CHAPTER IV: DISCUSSION

Latinx youth in the U.S. experience inequities that place them at increased risk for poor academic and mental health outcomes as compared to their non-Latinx White peers. Thus, it is important for research to seek a better understanding of risk and resilience processes that promote or interfere with positive development and adaptation in these domains. The goal of the current dissertation was to examine how academic functioning and depressive symptoms are associated across time and how shared cultural variables impact these longitudinal links. This dissertation extends the literature by testing a series of models to increase understanding of developmental cascade effects of academic functioning and depressive symptoms across late childhood and late adolescence in a sample of Mexican American youth, which have not been studied previously in the literature. Thus far, longitudinal studies focusing on the development of ethnic minority youth are scarce (Coll et al., 1996), as are those examining academic functioning and depressive symptoms together in Latinx samples. Further, given the importance of examining unique ecological contexts in development, especially for ethnic minority children and adolescents (Coll et al., 1996), this dissertation sought to examine how cultural variables and risk factors, such as nativity, sex, and discrimination impact these associations.

Hypothesis 1: Cascading Effects

Overall, contrary to hypotheses, no developmental cascade effects were identified. Results did not support the academic incompetence model, as was expected, nor the adjustment erosion model. Although the results were unexpected, they were not entirely surprising given the mixed results found in the extant literature. Some studies have identified directional links between various measures of academic functioning and depressive symptomology in children and adolescents, including with similar samples of Latinx youth. For example, Zychinski and

Polo (2012) found that academic achievement measured via standardized tests and grade point average was negatively associated with youth self-report of depressive symptoms on the Children's Depression Inventory in a sample of Latinx youth (ages 10-14). However, others have not consistently found such associations in ethnically heterogeneous samples (Cole et al., 1996: 1.7% Latinx; McLeod et al., 2012; 17% Latinx). Further, as noted previously, the developmental cascades literature examining these two domains jointly also finds mixed results regarding these cascade effects (Moilanen et al., 2010). Importantly, this study is the first to demonstrate that longitudinal links between academic functioning and depressive symptoms previously found in mostly non-Latinx White samples do not generalize to Mexican American youth.

Previous research broadly supports that academic functioning and depressive symptoms are related, but few studies have examined the direction of causality in this association (Lundy et al., 2010). Although this study did not find cross-lagged associations, results showed that academic functioning and depressive symptoms were negatively associated contemporaneously at almost all waves, such that worse youth grades were correlated with greater depressive symptoms at each timepoint. This is important because it suggests these domains may have immediate effects on one another, but these negative effects do not contribute to worsening in the other domain above the stability of that pattern that may exist, which is in line with past research finding a short window of influence for depressive symptoms specifically (Masten et al., 2005). Thus, conducting longitudinal work is necessary to continue teasing apart under which circumstances and for which youth these long-term effects arise.

Cultural Factors

One possible explanation for the lack of cascading effects of academic functioning and depressive symptoms in this study is that Latinx youth count on cultural factors, such as familism

values (e.g., strong attachment to family, reciprocated loyalty and obligation, subjugation of self to one's family; Steidel & Contreras, 2003) and racial and ethnic identity (positive view of one's ethnic group and strong identification with the group; Neblett et al., 2012), that serve as cultural strengths that promote resilience. It is possible that youth may experience academic difficulties or depressive symptoms at a certain point in time but are able to lean on family and cultural supports that help to buffer against long-term consequences, an effect that has been demonstrated in the literature (see Stein et al., 2014 for a review), but was not examined in the current study.

For example, a large literature shows that familism values serve a protective role against depression for Latinx adults and adolescents, both U.S. and foreign-born (Steidel & Contreras, 2003; Stein et al., 2015), as they are hypothesized to promote family cohesiveness and interconnectedness. Similarly, studies have found that familism plays a significant role in predicting academic functioning in Latinx adolescents, such that high endorsement of attitudinal familism predicts fewer missed classes in school and greater academic effort for both U.S. and foreign-born youth (Esparza & Sanchez, 2008). In addition, having a strong sense of family obligation and responsibility is associated with a desire to achieve at school (Fuligni & Tseng, 1999). For Latinx immigrant families, the decision to immigrate to the U.S. is a parenting decision, as they hope to provide a better education and a better economic future for their children (Perreira et al., 2006). Latinx youth are aware of this and perceive it as a great sacrifice that their parents made (Suárez-Orozco & Suárez-Orozco, 1995); thus, they likely feel that achieving good grades and having success in school is a way to make their parents proud and assist the family in the future. In fact, familial pride has been associated with fewer depressive symptoms and greater experience of joy, above and beyond familism values in Latinx young adults (Stein et al., 2019b). Theoretically, family expectations along with feelings of family unity

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brought about by familism values and pride could serve as a buffer against subsequent depressive symptoms and negative cascade processes for Latinx youth by providing them with positive self-schemas and the motivation to achieve goals in the face of risk and adversity.

Similarly, a positive racial and ethnic identity has been found to serve as a protective factor against depression in the face of stressors, such as discrimination (Neblett et al., 2012), and to promote various aspects of academic achievement (Rivas-Drake et al., 2014). Thus, theoretically, REI may function as a valuable resource that provides adolescents with a variety of ways by which to cope with stress and other negative life events (Sellers & Shelton, 2003), helping to prevent negative cascade processes from beginning.

Further, another possible explanation for the lack of longitudinal links between academic functioning and depressive symptoms is that perhaps there are other factors that shape how the two domains are linked. It is possible that for Latinx youth, there are other things that provide sense of meaning and purpose in life that are more salient than academic functioning. For example, marginalized youth often derive their sense of purpose through other avenues, such as opportunities for role fulfillment within the family, adaptive culture and identity-specific socialization, and shared values within their culture or community (Sumner et al., 2018). In line with this, studies with Latinx youth have found that familism values are associated with higher presence of meaning in life, which in turn is associated with lower depressive symptoms and higher academic motivation (Stein et al., 2020). Thus, it is likely that cognitions and self-concept are not as wedded to academic achievement for these youth, and even when they do not do well academically, their sense of self is preserved through role fulfillment in other areas, which in turn, buffers against subsequent depressive symptoms. In particular, the current sample was recruited from Northern California, from an area where the neighborhoods are composed of

majority Latinx families, an environment that may foster the cultural connectedness and pride that provides sense of meaning in life for these youth and families.

On the other hand, it is possible that there is a subset of Latinx youth for which sense of self and purpose is more wedded to achieving academically, which would not be captured by the modeling approach used in the current study. Unfortunately, ethnic minority youth are less likely to experience educational settings as supportive of their goals and successes (Cabrera et al., 1999; George et al., 2001; Hu & John, 2001). These inhibiting educational experiences likely have significant impacts on their beliefs about their abilities and cue identities (i.e., racial and ethnic) that make their actions feel hopeless when they experience academic difficulties. This is in line with Oyserman's identity-based motivation theory, which posits that for Latinx students, their social contexts (i.e., poverty, education, race-ethnicity, stigma, stereotyping) cue identity-based motivational processes (e.g., identity-incongruence), which then negatively influence their academic outcomes, and in turn, their mental health (Oyserman et al., 2007). As a result, when performance or achievement feels identity incongruent, it can affect motivation and self-esteem and instill a sense of hopelessness that may then initiate the negative developmental cascade processes that begin the cycle of academic difficulties, depressive symptoms, and further academic decline for some Latinx youth.

Finally, it is also possible that other factors and structural risks explain the link between academic functioning and depressive symptoms and lead to differential outcomes in these domains. For example, academic self-efficacy fully accounted for the relation between academic achievement and depressive symptoms in a sample of Latinx youth (Zychinkski & Polo, 2012). Additionally, studies have found that school and teacher quality, among other school- and classroom-level variables, impede academic achievement in Latinx youth (Barton & Coley,

2009; Flores, 2007), and these factors may be more predictive of future academic functioning, than are depressive symptoms. Similarly, other structural risks, such as poverty and discrimination, and family-based risks, such parent-child conflict, may be more predictive of depressive symptoms (Delgado et al., 2011; Greene et al., 2006; Kuhlberg et al. 2010; Stein et al., 2012), than are academics.

Thus, results from this study elucidate the importance of examining Latinx youth academic functioning and depressive symptoms through a culturally-informed perspective by focusing on both risk and resilience factors conjointly to gain a more nuanced understanding of how these factors shape youth development across time. They also highlight the need for future studies to use strengths-based approaches, especially when examining ethnic minority youth development more broadly, as there are many cultural factors that have been known to buffer against negative outcomes, even when youth are exposed to significant risk factors. Finally, results point to the importance of further examining potential mediators that may explain the links between academic functioning and depressive symptoms.

Measurement Issues

Moreover, the lack of cross-lagged paths in academic functioning and depressive symptoms in the current study may also be due to how grades and depressive symptoms were measured in this study. This study used youth self-reported grades and depressive symptoms. It is possible that youth are not accurately reporting their functioning, particularly when it comes to grades. Although grade point average is one of the most commonly used measures of academics, it does not fully capture the complete picture when it comes to youth's academic functioning. It is likely that other measures of academic functioning, such as engagement in school (teacher-, parent-, and self-reported), academic beliefs and attitudes, and adaptive behaviors that support

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achievement, are more predictive, not only of academic functioning, but of other outcomes, such as depression. For example, there may be children who are perceived to be "doing well" based on grades assessment but could potentially be struggling with negative academic self-efficacy and competence, which have both been linked with academic performance and depressive symptoms (Close & Solberg, 2008; Multon et al., 1991). Further, although youth are typically the best reporters when it comes to examining internalizing symptoms, such as their mood and cognitions (Edelbrock et al., 1986; Whitcomb & Merrell, 2013), it is also important to gather multi-informant data and use various methods to best capture depressive symptoms in youth, especially as these may present differently across developmental levels (Lewinsohn et al., 1998). In sum, there is marked inconsistency in operationalizing and measuring academic functioning and depressive symptoms, which often yields results that are incomplete, and difficult to interpret and compare across studies. Future studies need to move away from focusing only on behavioral symptoms and outcomes and begin to capture other factors and processes, including cognitive vulnerabilities, that may affect both academic and depressive cascades.

Hypothesis 2: Academic Difficulties in Childhood lead to Depressive Symptoms in Adolescence

Although previous research supports that academic difficulties often begin in childhood and subsequently lead to depressive symptoms later in adolescence (Deighton et al., 2018; Masten et al., 2005; Obradović et al., 2009; van Lier et al., 2012), this study did not find evidence of this effect. However, for youth in this sample, grades seemed to remain fairly stable and depressive symptoms seemed to decline only slightly across time, which may explain the lack of findings. Yet, studies point to the importance of considering critical developmental transition points, as well as focusing specifically on the timing and significance of developmental

processes that are involved in adaptive successes and failures (Masten et al., 2005). Masten and colleagues (2005) suggest that, "The immediate impact of failure in an age-salient developmental task on the psychological well-being of individuals would be expected to peak when success in that domain is most salient to the individual, family, or society, although the cumulative developmental costs could continue to mount over time" (p.744). Thus, it is important for future studies to consider other stage-salient factors that may undermine academic functioning or impact depressive symptoms. For example, future studies may consider social competence and peer relations in late childhood and adolescence and how difficulties (e.g., peer rejection) in this area may exacerbate depressive symptoms. For Latinx youth, it is critical for studies to continue exploring unique age-salient expectations, as well as, which are most important for demonstrating success and fulfillment within their individual families, cultures, and communities.

Hypothesis 3: Effects of Shared Risk Variables

Although the proposed analyses to examine whether nativity, sex, and discrimination would affect academic achievement and depressive symptom cascade processes were not carried out, some noteworthy patterns emerged in the preliminary and post hoc analyses.

First, consistent with past research (Cupito et al., 2015; Saluja et al., 2004; Siegel et al., 1998), results demonstrated sex differences in academic functioning and depressive symptoms. Sex was significantly negatively correlated with academic functioning (waves 3, 5-7) and depressive symptoms (waves 4-8). Specifically, being female was associated with higher academic functioning and higher depressive symptoms. Second, nativity was not found to be associated with academic functioning or depressive symptoms, except for small correlations found at two waves. Specifically, being first generation was associated with higher academic functioning at wave 4 and

with lower depressive symptoms at wave 8, findings that are consistent with the well documented immigrant paradox (Marks et al., 2014). Thirdly, discrimination reported at wave 1 was not associated with academic functioning at any wave. However, higher discrimination was associated with higher depressive symptoms at waves 1 and 2.

Further, post hoc multiple regression analyses did not reveal any significant relationships amongst the variables in the study in wave 1, except for finding that sex predicted depressive symptoms, such that males had lower depressive symptoms than females. Notably, these results suggest that the impact of discrimination was attenuated by sex as it was no longer a predictor of depressive symptoms in this model. Further, the post hoc cascade analyses demonstrated a slightly different pattern for males, finding support for the academic incompetence model, such that lower grades predicted subsequent higher depressive symptoms in late adolescence. It is possible that for Latinx males, succeeding in school becomes a much more salient developmental task in late adolescence as they begin to prepare for the transition out of high school. There may be increased pressure and awareness of family expectations and obligations post-high school, and if they are not doing well academically this may lead to depressive symptomology.

Although the findings noted here are in the directions expected based on extant research, it is surprising that the effects of the shared risk variables were not consistent across development, again pointing to the importance of examining stage and culturally salient issues across time. For example, being female was associated with higher academic functioning and depressive symptoms only during adolescence, and being first generation was associated with higher academic functioning only in early adolescence and with lower depressive symptoms later in adolescence. Further, results suggest that experiences of discrimination may also have a shorter window of influence, given that experiences at time 1 were not associated with outcomes

past wave 2. However, this finding contradicts previous research that finds that greater peer discrimination in late childhood predicts greater depressive symptoms in late adolescence (Stein et al., 2019b), supporting the notion that longitudinal studies need to account for unique periods of risk and that it is important to disentangle the source of discrimination as this may impact outcomes differently. For example, greater discrimination from school personnel, peers, and societal discrimination was associated with poorer academic performance, more psychological maladjustment, and heightened racial awareness, respectively, and these relations were consistent across gender and racial/ethnic groups in a sample of Latinx, African American, and Asian American youth (Benner & Graham, 2013).

These results highlight the importance of future studies considering how these and other cultural and contextual factors may intersect with youth developmental processes and serve to promote both resilient and adverse outcomes across time. Cultural and familial processes are central to ethnic minority development and become more salient as youth enter adolescence. As suggested by the PVEST model (Beale Spencer et al., 2015), it is important to consider context for Latinx youth with a focus on how they make sense of their daily experiences. Thus, future studies should also examine other factors, such as youth cognitions, not only through their individual evaluations of the self, but also through the way they perceive their experiences as they relate to their unique ecological circumstances. Additionally, results from this study suggest a more nuanced examination of the differential effects of shared risk factors, and in particular, of sex on academic functioning and depressive symptoms is necessary, as the effects of sex were not consistent across time.

Limitations and Future Directions

Although this study contributes to the literature by being one of the first, to my knowledge, to examine academic functioning and depressive symptoms longitudinally in a sample of Mexican American youth, it is not without limitations. First, as mentioned previously, there were measurement concerns regarding the current measures of academic functioning and depressive symptoms. It would be important to include data from multiple sources and methods in future studies to ensure accurate assessment of these constructs. Further, the measure of discrimination was global in nature and combined self-reported discrimination experiences from teachers, peers at school, neighborhood, and strangers. Future studies should aim to capture more nuanced experiences of discrimination as well as disentangle the source of discrimination, as these may yield differential impact on youth outcomes (Benner & Graham, 2013). Second, although a strength of this study was the focus on Latinx youth, the sample was limited in that it comprised all Mexican American youth, and the majority of the sample was 2nd generation (U.S.-born). Thus, studies with more diverse ethnic minority samples are needed to further clarify how academic and mental health cascade processes unfold over time. Third, the questions proposed in this study may have been better explored in a population that exhibits clinical depression. Although it is important to understand depressive symptoms, results and cascade effects may be more prominent and have longer-term consequences for youth who meet clinical criteria for depression and other mental health disorders. Finally, it is possible that other analytical methods may be better at disentangling the associations tested in this study. A fruitful avenue for better understanding adolescent academic and mental health functioning conjointly might be to employ a latent growth class analysis (LGCA), a model that attempts to identify subgroups within the population that follow distinctly different trajectories of change over time (Bauer & Reyes,

2010), to examine if there may be distinct profiles among youth or examine if there are sub-groups of students for which these two domains are linked differently.

Implications

An overarching goal of this dissertation was to contribute to the literature by helping to identify how depressive symptoms and academic functioning are related and influence one another across time in Latinx youth in order to better inform when preventive and treatment interventions may be most needed and most impactful. Although research identifies significant disparities in both academics and depressive symptomology in Latinx individuals, this study found that overall, youth in this sample were doing well academically and experienced low levels of depressive symptoms, and that these domains were not related across time. Thus, results do not directly support the need for implementing interventions at specific developmental time points. However, they do confirm the contemporaneous associations between the two domains that have been found in extant literature, which suggest youth interventions should aim to address both academics and depressive symptoms. Further, results elucidate that we know very little about how academic and depressive developmental cascades unfold in Latinx youth, and support more nuanced examination of these constructs and the cultural and contextual factors that may be associated with them.

Clinically, results provide implications for clinicians working with youth, such that it may be particularly important to leverage cultural strengths during treatment, especially for youth who are experiencing multiple risk factors. Much research has documented the remarkable resilience of Latinx youth, and the well adjustment of the youth in the current sample highlights the need for a more complete examination of how youth apply these cultural strengths to cope with stressors and how these contribute to their ability to maintain positive adaptation and

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development in the face of adversity. Moreover, results suggest interventions to reduce depressive symptoms should also focus on improving academic functioning and vice versa, as improving academic functioning may also have an impact on reducing depressive symptoms.

Conclusions

Latinx youth in the U.S. are at increased risk for poor academic functioning and depressive symptoms as compared to their non-Latinx White counterparts. These disparities are largely due to structural and systemic inequities that place them at heightened risk for experiencing social and environmental stressors across their lifetime. This study sought to contribute to the literature investigating how cultural factors may impact longitudinal links in two domains where disparities are well documented for Latinx youth: academic functioning and depressive symptoms. Uniquely, this study used a developmental cascades approach and integrated literature from ethnic minority models of development and cultural risk and resilience processes. Although results did not reveal evidence of cascading effects in this sample of Mexican American youth, this finding alone adds to the mixed literature that currently exists and cautions researchers against making broad generalizations and relying on commonly held notions when studying ethnic minority youth (Syed & Mitchell, 2013). This study also generally adds to literature highlighting the importance of considering moderators and mediators in clarifying the relation between academic functioning and depressive symptoms, and mechanisms underlying disparities in these domains. For example, correlational results support the body of literature documenting sex and nativity differences in these domains for Latinx youth, as well as the impact of discrimination on depressive symptoms specifically. This study therefore directs future research to further tease apart which factors serve as risk, which are protective for youth adjustment, and which have the potential to produce cascading effects in these domains across

development. Additionally, future studies should employ different models (e.g., LGCA) as these may better characterize patterns across time, and potentially identify subgroups that may be at greater risk for poor outcomes in these domains. Moreover, although this study primarily sought to provide recommendations for when interventions might be most effective, results only support the importance of ensuring interventions incorporate both mental health and academic components. Finally, it is also important to note that while understanding symptoms, such as low academic functioning and depression is crucial, it may be even more critical to take a step back to better understand and address the underlying causes of these disparities and the systems and structural barriers that sustain them.

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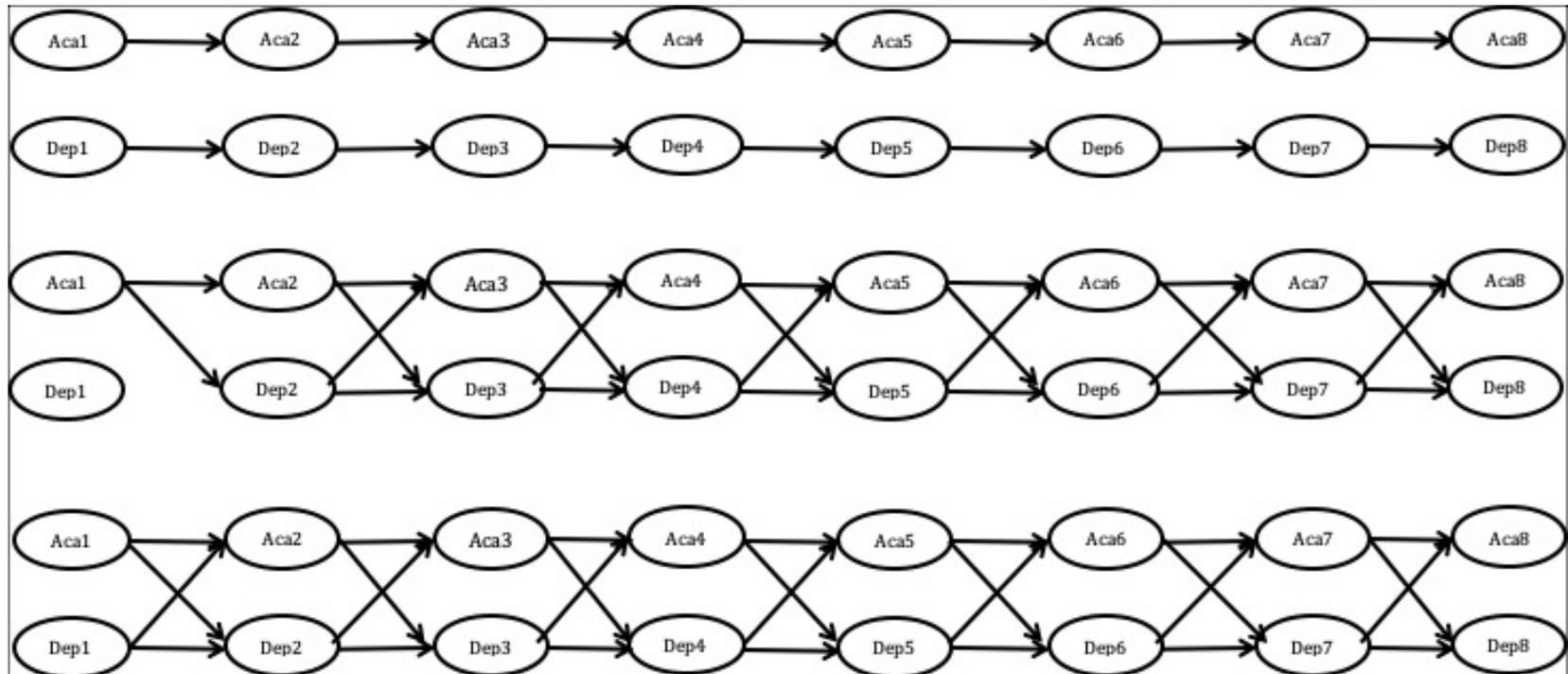
Figure 1. Conceptual presentation of nested models.
Note. Numbers denote time point of data collection. Aca = academic functioning; Dep = depressive symptoms.

Table 1

Example of Proposed Nested SEM Models for Cascade Analyses

T1 to T2 cascade path	T2 to T3 cascade path	T3 to T4 cascade path
Model 1—Continuity model (included in all subsequent models)		
Aca1 → Aca2	Aca2 → Aca3	Aca3 → Aca4
Dep1 → Dep2	Dep2 → Dep3	Dep3 → Dep4
Model 2—Academic cascades beginning first (academic incompetence model)		
Aca1 → Dep2	Aca2 → Dep3	Aca3 → Dep4
	Dep2 → Aca3	Dep3 → Aca4
Model 3—Depressive cascades beginning earlier (adjustment erosion model)		
Aca1 → Dep2	Aca2 → Dep3	Aca3 → Dep4
Dep1 → Aca2	Dep2 → Aca3	Dep3 → Aca4

Note. Numbers denote time point of data collection. Arrows designate estimated paths. All models also include concurrent correlations between the constructs of interest. SEM = structural equation modeling; Aca = academic functioning; Dep = depressive symptoms.
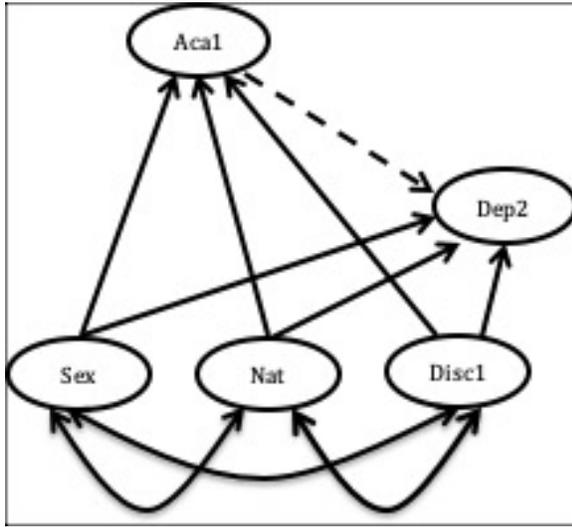
Figure 2. Example of shared risk variable spurious association model for one cascade path. *Note.* Numbers denote time point of data collection. Aca = academic functioning; Dep = depressive symptoms; Nat = nativity; Disc = racial and ethnic discrimination.

Table 2

Study variable descriptive statistics

Wave	Variable	N	M (SD)	Range
1	Depressive symptoms	643	5.50 (4.12)	1–21
	Academic functioning	449	4.11 (.82)	1–5
	Percapita income	603	$6,841 ($5,283)	$250–$38, 750
	Sex	674	1.50 (.50)	1–2
	Nativity	666	.72 (.45)	0–1
	Racial and ethnic discrimination	264	1.57 (.29)	1–3
2	Depressive symptoms	564	3.72 (3.75)	1–17
	Academic functioning	417	4.02 (.89)	1–5
3	Depressive symptoms	575	3.99 (3.83)	1–18
	Academic functioning	575	4.03 (.90)	1–5
4	Depressive symptoms	590	3.95 (3.83)	1–17
	Academic functioning	590	3.88 (.95)	1–5
5	Depressive symptoms	597	4.08 (4.22)	1–18
	Academic functioning	603	3.97 (1.08)	1–5
6	Depressive symptoms	588	3.79 (3.88)	1–18
	Academic functioning	580	3.73 (.93)	1–5
7	Depressive symptoms	599	3.36 (3.77)	1–17
	Academic functioning	586	3.95 (.99)	1–5
	Years in U.S.	596	14.86 (2.78)	0–18
8	Depressive symptoms	598	2.96 (3.41)	1–17
	Academic functioning	593	4.10 (.98)	1–5

Table 3

Study variable correlations

	1	2	3	4	5	6	7	8	9	10
1. Aca1										
2. Aca2	0.32**									
3. Aca3	0.28**	0.31**								
4. Aca4	0.23**	0.25**	0.47**							
5. Aca5	0.20**	0.22**	0.39**	0.39**						
6. Aca6	0.24**	0.24**	0.36**	0.45**	0.50**					
7. Aca7	0.20**	0.16**	0.32**	0.21**	0.48**	0.43**				
8. Aca8	0.18**	0.22**	0.27**	0.17**	0.24**	0.35**	0.32**			
9. Dep1	-0.09	-0.09	-0.13**	-0.10*	-0.09*	-0.12**	-0.07	-0.10*		
10. Dep2	-0.10	-0.16**	-0.07	-0.15**	-0.12**	-0.09	-0.08	-0.07	0.47**	
11. Dep3	-0.08	-0.01	-0.12**	-0.07	-0.11*	-0.11*	-0.05	-0.12**	0.31**	0.44**
12. Dep4	-0.08	-0.12*	-0.10*	-0.10*	-0.07	-0.11**	-0.06	-0.10*	0.27**	0.41**
13. Dep5	-0.03	-0.02	-0.05	-0.07	-0.15**	-0.05	-0.02	-0.05	0.28**	0.39**
14. Dep6	-0.05	-0.07	-0.09*	-0.12**	-0.08	-0.09*	-0.04	-0.09*	0.33**	0.35**
15. Dep7	0.02	-0.01	-0.06	-0.07	-0.05	-0.05	-0.07	-0.10*	0.20**	0.26**
16. Dep8	-0.01	-0.05	-0.09*	-0.10*	-0.03	-0.05	-0.02	-0.15**	0.21**	0.28**
17. Income	0.08	0.15**	0.07	0.09*	0.08	0.15**	0.08	0.02	-0.06	-0.09
18. Sex	-0.06	-0.08	-0.19**	-0.06	-0.10*	-0.10*	-0.13**	-0.09*	-0.02	-0.04
19. Nativity	-0.00	-0.02	-0.06	-0.13**	-0.08	0.04	-0.05	-0.01	0.02	0.02
20. Discrimination	0.03	-0.01	0.04	0.06	0.00	-0.10	0.01	0.08	.22**	.21**
21. Years in U.S.	0.06	0.00	-.12**	-.18**	-.15**	-.04	-.14**	-.09*	0.07	0.06

65

	11	12	13	14	15	16	17	18	19	20	21
1. Aca1											
2. Aca2											
3. Aca3											
4. Aca4											
5. Aca5											
6. Aca6											
7. Aca7											
8. Aca8											
9. Dep1											
10. Dep2											
11. Dep3											
12. Dep4	0.50**										
13. Dep5	0.48**	0.59**									
14. Dep6	0.39**	0.50**	0.57**								
15. Dep7	0.34**	0.42**	0.50**	0.56**							
16. Dep8	0.33**	0.37**	0.46**	0.52**	0.57**						
17. Income	-0.08	-0.11**	-0.03	-0.03	-0.08	-0.06					
18. Sex	-0.05	-.25**	-.27**	-.26**	-0.23**	-.22**	0.01				
19. Nativity	0.01	0.01	0.05	0.06	0.00	.08*	0.25**	-0.08			
20. Discrimination	0.10	0.13	0.08	0.04	0.02	0.11	-0.03	-0.11	-0.06		
21. Years in U.S.	0.06	0.04	0.06	.13**	0.04	.11**	0.18**	-0.09*	0.75**	-0.10	

Note. Aca = academic functioning; Dep = depressive symptoms; Numbers denote time point of data collection.

* $p < .05.$

** $p < .01.$

Table 4

Fit Statistics and Model Comparisons for Proposed Nested Models (MLR)

	SEM Analyses				Difference test of relative fit					Absolute fit statistics			
Model	**# c.p.**	***df***	***c***	**$\chi 2$**	**Comp.**	***cd***	**$\Delta\chi 2$**	**Δdf**	***p***	**CFI**	**TLI**	**RMSEA**	**SRMR**
1	0	121	1.148	216.98	1 vs. 2	1.062	37.163	20	0.011	0.944	0.93	0.038	0.069
2	13	101	1.165	179.93	2 vs. 3	1.095	1.795	1	0.180	0.954	0.931	0.038	0.060
3	14	100	1.166	178.13						0.954	0.931	0.038	0.059

Note. SEM = structural equation modeling; c = weighting constant for computing the chi-square statistic using the robust estimation method; Comp. = model comparison; cd = weighting constant for the difference between two chi-square statistics using the robust estimation method; CFI = comparative fit index; TLI = Tucker–Lewis Index; RMSEA = root-mean-square error of approximation; SRMR = standardized root-mean-square residual.
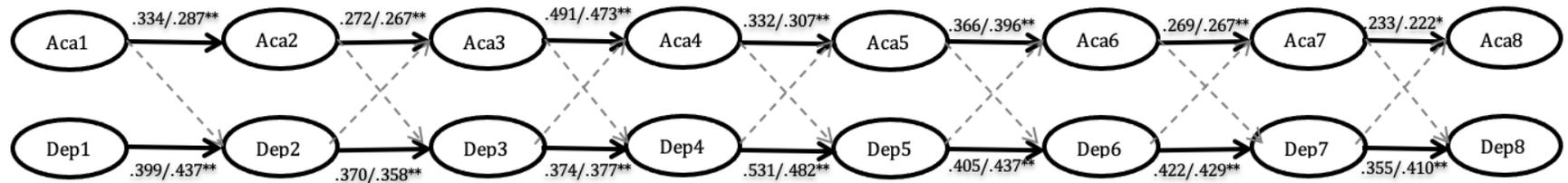
Figure 3. Unstandardized/standardized path coefficients for significant paths of Model 2. Dashed arrows indicate insignificant pathways. Numbers denote time point of data collection. Aca = academic functioning; Dep = depressive symptoms.
*p < .05.
*p < .001.

Table 5

Path Coefficients for all Cascade paths included in Model 2

Cascade path	β^*	β	SE	p
Aca1 → Dep2	-0.018	-0.085	0.052	0.732
Aca2 → Dep3	0.042	0.18	0.051	0.408
Dep2 → Aca3	-0.04	-0.01	0.045	0.374
Aca3 → Dep4	-0.024	-0.097	0.043	0.583
Dep3 → Aca4	-0.016	-0.004	0.041	0.691
Aca4 → Dep5	0.007	0.03	0.036	0.849
Dep4 → Aca5	-0.02	-0.005	0.042	0.632
Aca5 → Dep6	0.007	0.037	0.04	0.855
Dep5 → Aca6	0.049	0.011	0.04	0.221
Aca6 → Dep7	0.007	0.03	0.039	0.85
Dep6 → Aca7	-0.002	-0.001	0.034	0.953
Aca7 → Dep8	0.032	0.109	0.036	0.383
Dep7 → Aca8	-0.075	-0.02	0.044	0.087

Note. Aca = academic functioning; Dep = depressive symptoms; Numbers denote time point of data collection; Arrows designate estimated paths.

APPENDIX B: MEASURES

Academic Functioning

Child's Questions

schl01	What is your current grade point average? En general ¿qué calificaciones recibes en la escuela?	
	1	F
	2	D
	3	C
	4	B
	5	A
	8	Other, school does not give letter grades
	98	Refusal
	99	Don't know

Parent's Questions

schl01	On average, what are [FOCAL CHILD]'s grades?	
	1	Mostly F's
	2	Mostly D's
	3	Mostly C's
	4	Mostly B's
	5	Mostly A's
	8	Other, school does not give letter grades
	98	Refusal
	99	Don't know

Racial and Ethnic Discrimination

For the next set of questions, I am interested in your experiences with other people, in your neighborhood and at school. Tell me how true the following statements are for you.

Response Categories:	
1 = Not at all true	
2= Somewhat true	
3= Mostly true	
4= Very true	
5=Not allowed to	
8= Refusal	
9= Don't know	
dscr01	Your teachers think all [Mexicans/Mexican-Americans] are alike.
dscr02	You have heard kids at school making jokes or saying bad things about [Mexicans/Mexican-Americans].
dscr03	Kids at school think bad things about [Mexicans/Mexican-Americans].
dscr04	Your teachers dislike [Mexicans/Mexican-Americans].
dscr05	Kids at school dislike [Mexicans/Mexican-Americans].
dscr06	You have heard your teachers at school making jokes or saying bad things about [Mexicans/Mexican-Americans].

Thinking about these people, please tell me how often each of the following things happened to you in the past 3 months.

Response Categories:	
1 = Almost never or never	
2= Sometimes	
3= A lot of the time	
4= Almost always or always	
5=Not allowed to	
8= Refusal	
9= Don't know	
dscr07	How often have kids at school excluded you from their activities, like not inviting you to go out with them, not inviting you to their houses, or not letting you join their games, because you are [Mexican/Mexican-American]?
dscr08	How often have you had to work harder in school than White kids to get the same praise or the same grades from your teachers because you are [Mexican/Mexican-American]?
dscr09	Have kids at school called you names because you are [Mexican/Mexican-American]?

dscr10	Have your teachers expected you to misbehave more than other kids because you are [Mexican/Mexican-American]?

Tell me how true the following statements are for you.

Response Categories:	
1 = Not at all true	
2= Somewhat true	
3= Mostly true	
4= Very true	
5=Not allowed to	
8= Refusal	
9= Don't know	
dscr11	If you get bad grades, it is blamed on your family not valuing education
dscr12	You are taught about your Mexican heritage and history in the U.S.
dscr13	Teachers think kids who speak Spanish don't do as well at school.
dscr14	You are praised by your teacher because you do not speak English with a [Mexican/Mexican-American] accent.
dscr15	The teacher has the same educational expectations for [Mexican/Mexican-American] children as for other children.
dscr16	[Mexican/Mexican-American] children are often placed in separate classrooms.
dscr17	Your classroom rules - for example about going to the restroom, coming in late, accepting late homework, and so on - are applied equally to all children regardless of race.

Thinking about these people, please tell me how often each of the following things happened to you in the past 3 months.

Response Categories:	
1 = Almost never or never	
2= Sometimes	
3= A lot of the time	
4= Almost always or always	
8= Refusal	
9= Don't know	
dscr18	Did people assume you are from another country because of your skin color?

dscr19	Have your teachers punished you more harshly because you are [Mexican/Mexican-American]?