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Latino Youth with Spina Bifida: Psychosocial Functioning, Family Functioning, and Acculturation

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This thesis is dedicated to families of children with spina bifida, and the many individuals who devote their lives to helping children with disabilities live happy and healthy lives.

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ABSTRACT

Objective: Research on Latino youth with spina bifida (SB) is sparse. However, SB rates are highest in this ethnic group, and typically-developing (TD) Latino youth are at risk for poor psychosocial functioning. The aims of this study were to examine: (1) differences in psychosocial and family functioning between Latino and non-Latino Caucasian youth with SB; (2) family functioning as a predictor of youth psychosocial functioning as moderated by ethnicity; (3) the impact of acculturation on youth psychosocial and family functioning in Latino youth with SB. Methods: Participants were recruited as part of a larger, longitudinal study (Devine et al., 2012). The study's sample included 74 non-Latino Caucasian youth with SB and 39 Latino youth with SB (*M* age= 11.53, 52.2% female). This study included parent-, teacher-, and youth- report on internalizing and externalizing symptoms, social competence and acceptance, friendship quality, and family cohesion, conflict, and stress. Observational data of family interaction tasks were also included. All data were available at Time 1 and two years later at Time 2. Analyses controlled for SES and youth IQ. Results: Latino youth demonstrated fewer externalizing symptoms and less social competence, and Latino families demonstrated less family conflict. For non-Latino Caucasian youth, greater family cohesion predicted greater youth social competence and greater family stress predicted greater youth internalizing symptoms. For Latino youth, higher levels of mother acculturation predicted greater youth externalizing symptoms and less family cohesion. Conclusions: Compared

to non-Latino Caucasian youth with SB, Latino youth with SB demonstrate similar or better levels of psychosocial functioning, their families demonstrate less family conflict, and family functioning is less predictive of psychosocial functioning overtime. Levels of mother acculturation impact aspects of psychosocial and family functioning for Latino youth. Results have implications for how family-based interventions may be adapted for Latino families of youth with SB.

CHAPTER ONE

INTRODUCTION

Research has shown that youth with spina bifida (SB) have poorer psychosocial outcomes compared to typically-developing (TD) youth, including poorer mental health and social functioning outcomes (Ammerman et al., 1998; Holmbeck & Devine, 2010; Holmbeck et al., 2003, 2010). However, this research has been conducted primarily on non-Latino Caucasian youth with SB, and research on Latino youth with SB is sparse. It is important to focus on Latino youth with SB for two main reasons. First, the prevalence rates of SB are the highest for Latinos/Hispanics compared to all other ethnic or racial groups (Berry, Bloom, Foley, & Palfrey, 2010; CDC, 2009; Williams, Rasmussen, Flores, & Edmonds, 2005), and Latino/Hispanics are the country's second largest racial/ethnic group with Latino youth comprising 23% of all U.S. youth ages 17 and younger (U.S. Census Bureau, 2013). Second, research has demonstrated that TD Latino youth are at a greater risk for poor psychosocial outcomes compared to non-Latino Caucasian youth, such as internalizing and externalizing disorders as well as impaired social functioning (e.g., CDC, 2006; McLaughlin, Hilt, & Nolen-Hoeksema, 2007; Twenge & Nolen-Hoeksema, 2002; USDHHS, 2001; Van Voorhees et al., 2008; Vaquera, 2009; Varela et al., 2004; Varela, Steele, & Benson, 2007). This suggests that Latino youth with SB may be at the greatest risk for poor psychosocial outcomes among youth with SB.

In addition, research has demonstrated that family functioning may be an important predictor of adjustment for youth with SB (Bellin et al., 2010; Essner & Holmbeck, 2010; Holmbeck & Devine, 2010). Understanding how family functioning can affect psychosocial functioning in youth with SB is crucial to developing family-based prevention and intervention strategies to improve psychosocial functioning. But again, this research has been conducted primarily on non-Latino Caucasian youth with SB. Examining the link between family functioning and psychosocial functioning in youth with SB in Latino families may be particularly important given the strong emphasis on family in the Latino culture. Indeed, family functioning has been shown to be a strong predictor of psychological well-being in TD Latino youth (Gonzales, Deardorff, Formoso, Barr & Barrera, 2006; Rivera et al., 2008; Unger, Ritt-Olson, Wagner, Soto, & Baezconde-Garbanati, 2009). Specifically, Latino parents have been described as socializing their children according to cultural values, such as familism, that differ from those of the dominant U.S. culture (Cauce & Domenech-Rodriguez 2002; Zayas, Lester, Cabassa, & Fortuna, 2005). These practices generally place a greater emphasis on family cohesion while discouraging family conflict (Dixon, Graber, & Brooks-Gunn, 2008; Gonzales et al., 2006). However, research has shown that for Latino families, the degree to which these traditional cultural values are endorsed is greatly influenced by families' level of acculturation, or one's acquisition of cultural elements of the dominant U.S. culture (Cabassa, 2003). These findings suggest that acculturation should be taken into account when examining family functioning in Latino families.

A review of the current literature reveals a lack of understanding of psychosocial functioning in Latino youth with SB. It also reveals a lack of knowledge on family functioning in these families, and how family functioning and acculturation may influence youth's psychosocial functioning. The current study seeks to address these gaps by testing longitudinal, multi-method, and multi-informant models of these individual, familial, and acculturation factors (see Figures 1, 2, and 3). The following sections provide an overview of the current research on psychosocial functioning and family functioning in non-Latino Caucasian and Latino youth with SB, the relationships between these constructs, and how acculturation may exhibit an additional influence on these relationships within Latino families. Weaknesses and gaps and in the current literature are identified. A detailed description of the current study and its methods is provided. Lastly, results are presented and discussed. It is hoped that this study will inform the development of evidenced-based, culturally-sensitive family interventions aimed at improving psychosocial functioning in this population.

CHAPTER TWO

REVIEW OF THE RELEVANT LITERATURE

Psychosocial Functioning in Youth with Spina Bifida

Spina bifida (SB) is a relatively common congenital birth defect (approximately 3 out of every 10,000 live births; National Birth Defects Prevention Network, 2010) that is caused by failed closure of one or more vertebrae during the early weeks of gestation, and can result in a number of physical and neurological complications. These may include paraplegia, bowel dysfunction, clubfoot and other orthopedic conditions, hydrocephalus, and other neurocognitive impairments such as deficits in attention and executive functioning (Rose & Holmbeck, 2007). The severity of SB varies and depends, in part, on the spinal lesion level and neurological complications, such as the number of shunt infections and shunt replacements (Fletcher & Brei, 2010; Sandler, 2004). Given these complications, individuals with SB typically follow a demanding medical regimen to maintain optimal health, which may include medications, catheterization, bowel programs, skin checks, and shunt monitoring (Zukerman, Devine, & Hombeck, 2011).

Along with numerous illness-related challenges, youth with SB are likely to face significant psychosocial challenges. Indeed, research has shown that these youth have poorer psychosocial outcomes compared to typically-developing (TD) youth, including psychological and social functioning outcomes (Ammerman et al., 1998; Holmbeck & Devine, 2010; Holmbeck et al., 2003, 2010).

Psychological Adjustment

A large portion of the research investigating psychosocial functioning of youth with SB has focused on internalizing symptoms, particularly depressive symptoms. Although adolescence is a time when the risk for depression increases in all youth (Kessler, Avenevoli, & Merikangas, 2001), those with SB tend to be at a greater risk compared to their TD peers. Several studies have found high rates of internalizing symptoms, particularly depressive symptoms, in youth with SB (Ammerman et al., 1998; Bellin et al., 2010). These rates are especially high when compared to their TD peers (Appleton et al., 1997; Cate, Kennedy, & Stevenson, 2002; Kelly et al., 2012; Lavigne & Faier-Routman, 1992).

Several other studies have found that youth with SB are also at risk for externalizing symptoms (Ammerman et al., 1998). A meta-analytic review of 87 studies by Lavigne and Faier-Routman (1992) revealed that children with pediatric physical disorders, including SB, were at increased risk externalizing symptoms. However, another study of 8-9 year olds with SB found no difference in externalizing symptoms between them and their same-aged peers (Holmbeck et al., 2003).

Given that youth who experience depressive symptoms during adolescence are more likely to exhibit recurrent episodes of depression throughout adulthood (Graber, 2004), and that internalizing and externalizing symptoms more generally can negatively impact one's capacity for self-care, employment, and other areas of functioning (Judd et al., 2000), research on factors contributing to internalizing and externalizing symptoms in youth with SB has direct implications for preventing these symptoms as well as

associated functional impairments, in a group of youth that are most at risk for these problems.

Social Adjustment

Many studies have also investigated social adjustment in youth with SB, and this research has revealed that these youth may be at a particular risk for experiencing social difficulties, which appear in childhood and persist during adolescence (Holmbeck et al., 2010). Specifically, youth with SB are less socially competent compared to their TD peers (Shields, Taylor, & Dodd, 2008), including that they tend to be more socially immature and passive (Holmbeck et al., 2003). However, one study reported that children with SB and their TD peers did not differ on social conversational skills (Van Hasselt, Ammerman, Hersen, Reigel, & Rowley, 1991).

Still, children with SB also report lower levels of social acceptance (Holmbeck et al., 2010). Several studies have found that these youth spend less time with friends, have more limited out of school contact with friends, and participate in less organized social activities (Blum, Resnick, Nelson, & St. Germaine, 1991; Buran, Sawin, Brie, & Fastenau, 2004; Devine, Holmbeck, Gayes, & Purnell, 2012; Holmbeck et al., 2003). Indeed, studies have found them to have smaller peer networks, have less peers within their peer networks, and overall fewer friendships (Cunningham, Thomas, & Warschausky, 2007; Ellerton, Stewart, Ritchie, & Hirth, 1996; Holmbeck et al., 2010). Further, they tend to have friendships of lower quality that are less likely to be reciprocated as compared to the friendships of their TD peers (Cunningham et al., 2007; Devine, Holmbeck, et al., 2012). For example, children with SB viewed their friendships

as being closer than as rated by their friends, and were more likely to see peers as best friends rather than the reverse. These youth also reported lower levels of companionship, security, emotional support, and closeness in their friendships compared to their TD peers (Devine, Holmbeck, et al., 2012).

Understanding more about social adjustment in youth with SB and what factors may impact it is important for youth's adjustment in its own right, as well as how it impacts other components of youth's emotional and behavioral well-being, as research has found adaptive social adjustment to be associated with lower levels of internalizing and externalizing problems (Guerra & Leidy, 2008; Kim & Cicchetti, 2004; Rubin, Chen, McDougall, Bowker, &McKinnon, 1995; Shonk & Cicchetti, 2001).

Family Functioning in Families of Youth with Spina Bifida

Researchers have voiced the need for more methodologically sound, longitudinal, and theory-driven studies of family functioning in youth with SB (Holmbeck, Greenley, Coakley, Greco, & Hagstrom, 2006; Holmbeck & Devine, 2010). Past studies comparing families of youth with SB to families of TD youth have found differences in family functioning, while other studies have not.

Most studies examining family functioning have focused on family cohesion, conflict, and stress, as these domains have been shown to have a significant impact on child outcomes (Cox & Brooks-Gunn, 1999). One study found that families of youth with SB were less cohesive than families of TD children, especially if families of youth with SB were from lower socioeconomic backgrounds. However, this same study found no group differences in family conflict (Holmbeck, Coakley, Hommeyer, Shapera, &

Westhoven, 2002). In addition, although previous research has found high levels of individual stress within families of youth with SB (e.g., Holmbeck et al., 1997), two studies have found that the overall levels of family stress were similar to that in TD families (Holmbeck, Coakley, et al., 2002; Jandasek, Holmbeck, DeLucia, Zebracki, & Friedman, 2009). Furthermore, one study found that, unlike their TD peers, families of youth with SB did not demonstrate normative increases in family conflict as a function of pubertal development (Coakley, Holmbeck, Friedman, Greenly, & Thill, 2002). Similarly, a longitudinal study based on the same data set found that for families of youth with SB, changes in family cohesion and conflict over time did not occur as much as that seen in families of TD children (Jandasek et al., 2009). In summary, the existing literature supports a resilience-disruption model of family functioning for families of youth with SB (Costigan, Floyd, Harter, McClintock, 1997; Holmbeck, Coakley, et al., 2002). Specifically, this suggests that while the presence of a child with SB may disrupt normative family functioning in certain ways, these families are able to adapt and demonstrate considerable resilience. In other words, families of children with SB demonstrate areas of both disruption and resilience compared to families of TD children.

Family Functioning as a Predictor of Youth Psychosocial Functioning

Studies that have examined the impact of family functioning on psychosocial functioning in youth with SB are limited, though some do exist. Studies investigating predictors of internalizing symptoms in these youth have examined a variety of constructs, including parenting, parent functioning, pain, severity of SB, quality of life, attitudes towards SB, metacognitive abilities, health care services, and socioeconomic

status as possible factors (Bellin et al., 2010; Friedman, Holmbeck, Jandasek, Zukerman, & Abad, 2004; Kelly et al., 2012; Kelly, Holmbeck, & O'Mahar, 2011; Holmbeck et al., 2003; Oddson, Clancy, & McGrath, 2006; Schellinger, Holmbeck, Essner, & Alvarez, 2012), while studies examining predictors of externalizing symptoms have almost exclusively looked at parenting (Friedman et al., 2004; Holmbeck, Johnson, et al., 2002). However, very few studies have examined how family functioning relates to internalizing and externalizing symptoms in youth with SB**.** The exceptions are one study that found that higher levels of positive experiences within the family context were associated with fewer depressive symptoms (Essner & Holmbeck, 2010) and another study that found that satisfaction with family functioning had small effects on youth's depression and anxiety symptoms (Bellin et al., 2010). Unfortunately, despite the fact that this area of psychosocial functioning is particularly problematic for most children with SB, there is a lack of research on how family functioning can influence social adjustment.

Latino Youth with Spina Bifida

The prevalence rates of SB are the highest for Latinos/Hispanics compared to all other ethnic or racial groups (Berry et al., 2010; CDC, 2009; Williams et al., 2005). Specifically, from 1999-2004, prevalence rates of SB per 10,000 live births were 4.17 for Latina mothers, 3.22 for non-Latina Caucasian mothers, and 2.64 for non-Latina AfricanmAmerican mothers (CDC, 2009).

Surprisingly, research on Latino youth with SB is scarce. The only study examining psychosocial functioning in this population found that for young people with SB, being Latino or not speaking English at home had adverse effects on participation in

social activities and work (Liptak, Kennedy, & Dosa, 2010). The only other study on this population found that Latino children with lower SES had lower verbal than nonverbal IQ scores, and that Latino children with higher SES and non-Latino Caucasian children demonstrated the reverse pattern (Swartwout, Garnaat, Myszka, Fletcher, & Dennis, 2009). In addition, although one study examined parent adjustment and parenting behaviors in families of Latino youth with SB (i.e., Devine, Holbein, Psihogios, Amaro, & Holmbeck, 2012), no studies to date have examined family functioning within this population.

The field (e.g., Holmbeck & Devine, 2010) has recommended that future studies of youth with SB include families with more ethnic and SES diversity, and most importantly, include Latino families, given the high prevalence rates of SB in this population. Latino/Hispanics are the country's second largest racial/ethnic group (behind non-Latino Caucasians), representing about 17% of the total population, and it is projected that they will constitute 30% of the population by 2050. Further, Latino youth make up 23% of all U.S. youth aged 17 and younger, which is a 39% increase since year 2000 (U.S. Census Bureau, 2013).

Psychosocial Functioning in Typically-Developing Latino Youth

Psychological Adjustment

Although little research has examined Latino youth with SB, an extensive body of literature exists on the psychosocial functioning of TD Latino youth. The majority of existing research has shown that TD Latino youth are at risk for poor psychosocial functioning, specifically internalizing and externalizing disorders. In terms of

internalizing disorders, studies have shown that Mexican-American children reported significantly greater levels of anxiety compared to European-Americans (Varela et al., 2007; Varela et al., 2004). In addition, multiple studies have demonstrated that Latino youth are disproportionately more likely to experience symptoms of depression (McLaughlin et al., 2007; Twenge, & Nolen-Hoeksema, 2002; Van Voorhees et al., 2008), sometimes reporting rates twice that of European American youth. Such was the case in a random digit dial telephone survey of 3,196 California youth ages 12–17, which revealed 10.5% of Latino youth had symptoms of depression that were in the moderately depressed range on the Center for Epidemiologic Studies Depression Scale, compared to only 5.5% of European American youth (Mikolajczyk, Bredehorst, Khelaifat, Maier, & Maxwell, 2007). Further, results of a school-based survey collected from 9863 students in grades 6, 8, and 10 across the U.S. revealed that 18% of all youth reported symptoms of depression. Of that group reporting symptoms, 29% were American Indian youths, 22% were Latino, 18% were Caucasian, 17% were Asian American, and 15% were African American (Saluja et al., 2004). Lastly, according to the Center for Disease Control (2006), 36.2% of Latino youth reported feeling sad or hopeless almost every day for longer than the past two weeks, compared to 25.8% of European American youth.

Existing research shows that TD Latino youth are also at a greater risk for externalizing problems. Epidemiological data has documented disproportionate drug use, delinquency problem behaviors, and incarceration for Latinos compared to their European American peers (USDHHS, 2001). For example, according to the 2005 Youth Risk Behavior Survey completed by 13, 917 U.S. high school students (CDC, 2006),

compared to European American males, Latino males are more likely to have been in a fight in the past year (41.0% compared to 33.1%), carried a weapon on school property in the past 30 days (13.7% compared to 10.1%), and to have greater lifetime cigarette use (62.1% compared to 54.9%). Both male and female Latino youth are more likely than their European American peers to have carried a gun in the past 30 days (6.5% compared to 5.3%), have greater lifetime alcohol use (79.4% compared to 75.3%), greater lifetime use of marijuana (42.6% compared to 38.0%), greater lifetime use of cocaine (12.2% compared to 7.7%), and greater lifetime illegal injection drug use (3.0% compared to 1.9%; CDC, 2006).

Social Adjustment

The majority of studies examining the social functioning of TD Latino youth have focused on how it may be impacted by Latino cultural values or acculturation factors, and these studies will be reviewed shortly. Besides those studies, few investigations have examined the social adjustment of TD Latino youth on its own, or in comparison to other ethnic groups. Among those that have is a study which found that Latino students were more likely to be friendless than their Caucasian peers, and were less likely to form friendships in school (Vaquera, 2009).

The Impact of Acculturation

Within the large body of research on psychosocial functioning of TD Latino youth are a number of studies that focus specifically on the role of acculturation. Many assert that, compared to non-Latino Caucasian youth, Latino youth typically face a greater variety and amount of challenges because of factors related to immigration and

acculturation (e.g., Potochnick & Perreira 2010; Zayas et al., 2005). However, the way in which acculturation is conceptualized and measured has evolved, resulting in mixed research findings on the effect that acculturation has on Latino youth's outcomes.

Acculturation among Latino youth has been viewed as the acquisition of cultural elements of the dominant U.S. culture and, as such, acculturating Latino youth can experience changes in their attitudes, behaviors, practices, interpersonal relationships, language, values, and ethnic identifications that reflect this acquisition (Cabassa, 2003; Schwartz, Unger, Zamboanga, & Szapocznik, 2010). Until recently, it was generally believed that acculturation to the dominant U.S. culture would lead to better psychosocial outcomes. It was suggested that the more an individual is able to adapt to and adopt U.S. cultural practices, the less likely he/she is to face challenges that lead to poor outcomes, which may arise from the discrepancy between one's native culture and the dominant culture (e.g., challenges related to language barriers, discrimination; Schwartz et al., 2010). Indeed, studies have found that Latino youth have a reduced risk of internalizing symptoms if they were born in the U.S. (Glover, Pumariega, Holzer, Wise, & Rodriguez, 1999), the longer they have been in the U.S. (Potochnick & Perreira, 2010), the greater their involvement in the U.S. culture (Smokowski, Rose, & Bacallao, 2010), if they spoke English as opposed to Spanish at home (Yu, Huang, Schwalberg, Overpeck, & Kogan, 2003), and if they spoke, read, and wrote English fluently (Glover et al., 1999). In addition, it was found that children with greater English proficiency demonstrated fewer externalizing symptoms (Dawson & Williams, 2008). Further, it has been found that social competence protects highly acculturated boys against delinquent behaviors and

internalizing symptoms, but it had the opposite effect for boys who were less acculturated (Loukas, Suizzo, & Prelow, 2007).

However, an opposing body of research began to reveal that acculturation may actually *increase* the risk for poor psychosocial functioning (Schwartz et al., 2010; Vega & Sribney, 2008). This is referred to as the "Immigrant Paradox," a troubling phenomenon that has shown that greater length of residence in U.S. is associated with a decrease in overall well-being and functioning (Alegrıa et al., 2007; Smokowski, Bacallao, & Buchana, 2009). Studies have revealed that Latino youth who are born in the U.S. are at greater risk of mood, anxiety, and substance use disorders compared to their immigrant peers (Alegria et al., 2007; Grant et al., 2004), and that youth whose parents were U.S.-born are also more likely to exhibit externalizing problems compared to youth of immigrant parents (Degboe, BeLue, & Hillemeier, 2012). In addition, time in the U.S. is associated with an increase in externalizing problems (Smokowski, Buchanan, & Bacallao, 2009; Martinez, McClure, Eddy, & Wilson, 2011). Further, those who show greater endorsement of U.S. cultural practices compared to their traditional Latino cultural practices are at a greater risk for internalizing symptoms and behavior problems (Dinh, Roosa, Tein, & Lopez, 2002; Polo & Lopez, 2009; Sullivan et al., 2007), whereas those who show greater endorsement of their Latino cultural practices are likely to show lower levels of externalizing behaviors (Gonzales et al., 2008).

Several theories have been proposed in effort to explain the Immigrant Paradox. One such theory is that traditional Latino cultural values may be protective against poor psychosocial outcomes. For example, familism may protect youth against the

development of psychosocial impairments by promoting a better network of social support (Grant et al., 2004). Another proposed theory is the "frustrated status" hypothesis, which posits that U.S.-born Latinos may be at greater risk of poor psychosocial outcomes because of a higher set of expectations about what constitutes success in America, which leads to greater stress if those expectations are not met (Grant et al., 2004). Another theory that has received considerable attention is the "acculturation gap-distress hypothesis," which suggests that there is a clash of values and preferences that occurs within families when children are more acculturated than their parents. This intergenerational acculturation gap leads to family conflict, which in turn results in youth maladjustment (Lau et al., 2005). However, results supporting this hypothesis are also mixed, as one study found that an acculturation gap increased youth's internalizing and externalizing symptoms when father-child relationship quality was poor (Schofield, Parke, Kim, & Coltrane, 2008), but others studies have found that families exhibiting an acculturation gap were not more likely to report adolescent adjustment problems (Pasch et al., 2006). The mixed findings of the acculturation gap-distress hypothesis become even more convoluted in light of research that has examined the impact of both parent and youth acculturation, and how varying levels of each can differentially impact youth outcomes. For example, one study found that greater parent involvement in U.S. culture was related to less youth anxiety and social problems, though youth's own involvement in U.S. culture was not related to these outcomes. Further, greater youth involvement in Latino culture was related to less depression and more social problems, but parent

involvement in Latino culture had no effect on youth's outcomes (Smokowski, Buchanan, et al., 2009).

By reviewing the body of research on acculturation, it becomes clear that studies fall onto a spectrum of research indicating that acculturation is either adaptive, deleterious, or somewhere in between. In efforts to explain this incongruity, researchers have identified the cause to be the narrow, inconsistent manner in which acculturation has been conceptualized and measured. Until recently, most studies have relied on unidimensional conceptions of acculturation, believing that as immigrants acquire the values, practices, and beliefs of their new homelands, they discard those from their cultural heritage. Further, a variety of variables (e.g., immigrant status, language preference, media preferences) are used to reflect acculturation, but often they are used in isolation. Now, a multidimensional acculturation theory is beginning to gain momentum. Often referred to as biculturalism (Benet-Martínez & Haritatos, 2005), this theory suggests that Latino youth can acquire the receiving-culture, or *acculturate*, while simultaneously retaining the heritage-culture, or *enculturate* (Berry, 1980; Cabassa, 2003; Schwartz et al., 2010). Indeed, biculturalism has been found to be associated with the most favorable psychosocial outcomes, especially among Latino youth (e.g., Coatsworth, Maldonado-Molina, Pantin, & Szapocznik, 2005; David, Okazaki, & Saw, 2009). Specifically, bicultural Latino youth tend to be better adjusted in terms of having higher self-esteem, lower depression, and greater prosocial behaviors (Chen, Benet-Martínez, & Bond, 2008; Schwartz, Zamboanga, & Jarvis, 2007; Szapocznik, Kurtines, & Fernandez, 1980).

Family Functioning in Latino Families of Typically-Developing Youth

Latino parents have been described as socializing their children according to cultural values and styles of interaction that differ from those of the dominant U.S. culture (Cauce & Domenech-Rodriguez, 2002; Zayas et al., 2005). Familism has been identified as the cultural value most central to Latinos families, characterizing it as a vital source of support that is made up of close-knit, cohesive, and interdependent relationships (Baca Zinn, 1982-1983; Cauce & Domenech-Rodriguez, 2002; Vega, 1995; Villanueva-Dixon, Graber, & Brooks-Gunn, 2008). It is defined as a *value* endorsed by individuals reflecting their attitudes toward family solidarity, family integration, intra- and intergenerational support, and a commitment to family members which supersedes attention to the individual (Marsiglia, Parsai, Kulis, & Southwest Interdisciplinary Research Center, 2009; Sabogal, Marin, Otero-Sabogal, & Marin, 1987). Familism is a culturally-derived value considered capable of influencing family interaction patterns and individuals' social behaviors with beneficial effects for the well-being of those individuals and their families. Familism is related to family cohesion, which is described as the emotional bond that family members communicate to each other, such as by expressing belonging and acceptance within the family (Marsiglia et al., 2009). Although these constructs are related and typically positively correlated, many researchers make a distinction between the two: familism reflects the *valuing* of one's family, while family cohesion reflects the *emotional bond* within one's family (Marsiglia et al., 2009). Familism is associated with positive interpersonal relationships within the family, high family unity and contact, high social support, and interdependence in role function

(Gaines et al., 1997; Romero, Robinson, Haydel, Mendoza, & Killen, 2004). Within Latino families, both family cohesion and familism have been shown to promote family support and closeness while discouraging family conflict (Gonzales et al., 2006; Lorenzo-Blanco, Unger, Baezconde-Garbanati, Ritt-Olson, & Soto, 2012).

Although familism is a common characteristic of individuals across a variety of cultures, studies have shown Latinos to demonstrate higher levels of familism compared to other ethnic groups (Sabogal et al., 1987); thus, familism remains frequently cited as central to understanding family processes in Latino families (Fuligni, Tseng, & Lam, 1999; Marín, 1993). Indeed, compared to non-Latino Caucasian youth, Latino youth endorse stronger positive attitudes towards collectivism as a cultural value, as well as family support and respect (Fuligni, Tseng, & Lam, 1999; Varela et al., 2004). These values are in contrast to the emphasis on independence and achievement typically found in European American families (Triandis, 1994). Furthermore, although research suggests that cultural values may influence family functioning within Latino families, it is important not to assume that all Latino families are characterized by these traditional cultural values. Latinos are a heterogeneous group, and each subgroup has its own characteristics, and can differ from one another in terms of cultural values, language, socioeconomic status, and education (Kouyoumdjian, Zamboanga, & Hansen, 2003; Lopez, Barrio, Kopelowicz, & Vega, 2012).

In addition, current evidence suggests Latino families are at risk for experiencing a variety of stressors, such as those related to poverty and discrimination, and this stress may contribute to and exacerbate family conflict and family stress (Romero & Roberts,

2003). Indeed, 30 percent of all Latino children in the United States live in poverty, and for those not in poverty, many are still from low-income households (DeNavas-Walt & Proctor, 2013).

Family Functioning as a Predictor of Youth Psychosocial Functioning

Research investigating the impact of family functioning on psychosocial functioning in TD Latino youth has examined family cohesion and family conflict generally, as well as familism specifically as a cultural asset. While family conflict has been found to be a risk factor for depressive symptoms (Cook, Alegria, Lin, & Guo, 2009; Gonzales et al., 2006; Lorenzo-Blanco et al., 2012), family cohesion has been found to be protective against depressive and anxiety symptoms (Lorenzo-Blanco et al., 2012; Rivera et al., 2008; Schwartz et al., 2006; Van Voorhees et al., 2008; Varela, Sanchez-Sosa, Biggs, & Luis, 2009), conduct problems (Marsiglia et al., 2009), engaging in risky behavior (German, Gonzales, & Dumka, 2009), and peer pressure (Bamaca & Umana-Taylor, 2006). It has also been shown to predict gains in social self-efficacy and social skills (Leidy, Guerra, & Toro, 2010; Thayer et al., 2008).

Familism as a cultural asset has also been found to be a predictive of better psychosocial functioning in TD Latino youth. The exception is one study that found that greater familism is associated with higher internalizing symptoms (Kuhlberg, Pena, & Zayas, 2010). Besides that, studies have revealed it to be associated with fewer internalizing and externalizing symptoms, and protective against delinquency, substance use, and deviant peer affiliations (Coohey, 2001; Gil, Wagner, & Vega, 2000, German et al., 2009; Santiago & Wadsworth, 2011; Smokowski et al., 2010), even when controlling

for family cohesion (Marsiglia et al., 2009). In addition, one study found that families' greater involvement with the Latino culture predicted fewer internalizing symptoms, as mediated by increased familism (Smokowski, Bacallao, et al., 2009). Another study found that familism interacted with family cohesion to predict fewer behavior problems (Gamble & Modry-Mandell, 2008), and interacted with parenting practices to predict fewer behavior problems (Santisteban, Coatsworth, Briones, Kurtines, & Szapocznik, 2012). Collectively, this research demonstrates that the cultural values typically demonstrated in Latino families can serve as protective factors against poor psychosocial outcomes in youth.

The Impact of Acculturation

As with the literature on youth's psychosocial functioning, researchers disagree on the impact that acculturation has on family functioning in Latino families. On one side, researchers have proposed that acculturation can be adaptive for families just as it is for individuals, because it reduces the challenges that are posed by cultural discrepancies between both the family and the larger society and between parents and children (Lau et al., 2005; Schwartz et al., 2010).

On the other side, researchers have proposed that acculturation is often accompanied by deterioration in family functioning through a loss of Latino cultural values (Gonzales et al., 2006; Zayas et al., 2005). Indeed, studies have shown that as acculturation increases, familism and family cohesion decrease, and family stress and conflict increase (Baer & Schmitz, 2007; Buchanan & Smokowski, 2011; Gonzales et al., 2006; Marin, 1993; Martinez, 2006; Miranda, Estrada, & Firpo-Jimenez, 2000; Pasch et

al., 2006; Sullivan et al., 2007; Zayas et al. 2005). Furthermore, several studies have examined how acculturation negatively impacts psychosocial functioning in TD Latino youth through meditational pathways of family functioning, supporting the Immigrant Paradox. Several of these studies suggest that acculturation leads to lower family cohesion and higher family conflict and stress, which then leads to poorer psychosocial functioning (Martinez et al., 2011). This pattern was revealed in a study by Lorenzo-Blanco and colleagues (2012) for internalizing symptoms. Another example is a study which found that for Mexican-origin youth (62% U.S. born), symptoms of depression increased with youth's acculturation to the dominant U.S. culture, and that family conflict mediated the link between acculturation and both depressive symptoms and conduct problems (Gonzales et al., 2006).

Again, the mixed findings on the effects of acculturation are likely due to the unidimensional manner in which acculturation is conceptualized and measured. The theory of biculturalism can be applied to families in the same way it has been applied to individuals, to suggest that Latino families can acculturate and enculturate simultaneously (Benet-Martínez & Haritatos, 2005; Berry, 1980; Cabassa, 2003; Schwartz et al., 2010). Although few studies have investigated Latino family functioning within a bicultural framework, one study found that parents who reported being bicultural also reported having greater family cohesion than parents who reported both low and high levels of acculturation (Christenson, Zabriskie, Eggett, & Freeman, 2006).

General Issues with Current Research

Despite the fact that prevalence rates of SB are the highest for Latinos (Berry et al., 2010; CDC, 2009; Williams et al., 2005), the review of current literature clearly reveals that there are critical gaps in the research about Latino youth with SB. Specifically, research on psychosocial functioning in Latino youth with SB is essentially non-existent. Given that previous research has shown that both youth with SB (e.g., Holmbeck et al., 2003, 2010) and TD Latino youth (e.g., CDC, 2006) are at risk for poor psychosocial functioning, this combination of findings suggests that Latino youth with SB may be especially at risk. It is important to first determine *whether* Latino youth with SB are more at risk for poor psychosocial functioning compared to non-Latino Caucasian youth with SB. If this is the case, then questions can be posed about *why* such group differences exist, and how they can be prevented or addressed.

In addition, no research to date has examined family functioning in Latino youth with SB. Although there is research on family functioning in youth with SB in general, this research is inconsistent, revealing these families are both resilient and vulnerable (e.g., Holmbeck, Coakley, et al., 2002). In addition, there is an incomplete understanding of how family functioning impacts psychosocial functioning in these families. Furthermore, no existing research has examined how family functioning impacts psychosocial functioning in Latino youth with SB. Understanding these dynamics in Latino families may be especially important considering the significant emphasis placed on the family within Latino culture, as well as the additional stressors that these families commonly face (Cauce & Domenech-Rodriguez, 2002). By comparing how family

functioning may impact psychosocial functioning differently for Latino youth with SB compared to non-Latino Caucasian youth with SB, it can be determined whether family functioning serves as a potential protective factor for Latino youth with SB. Indeed, it has been recommended that future research attempt to identify mechanisms of family resilience that can serve as a basis for future interventions (Holmbeck et al., 2006; Kelly, Zebracki, Holmbeck, & Gershenson, 2008).

However, in order to fully understand how family functioning may impact psychosocial functioning in Latino youth with SB, it is essential to recognize that within the broad Latino culture, there is considerable variability regarding the degree to which one is oriented towards their native culture and the dominant U.S. culture. Indeed, previous research has shown that for Latino families, the degree to which traditional cultural family values (e.g., familism) are endorsed is greatly influenced by families' level of acculturation (Cabassa, 2003). These findings suggest that acculturation should be taken into account when examining how family functioning impacts psychosocial functioning in Latino families. Among studies that have examined these relationships, findings suggest that acculturation (defined as the acquisition of dominant cultural values and the loss of native cultural values) leads to lower family cohesion and higher family conflict, which then leads to poorer psychosocial functioning (Gonzales et al., 2006; Lorenzo-Blanco et al., 2012). However, parents who were able to acculturate while maintaining their native cultural values (i.e., enculturate, or engage in biculturalism) reported having greater family cohesion than parents who reported both low and high

levels of acculturation (Christenson et al., 2006). Still, no studies have examined this within Latino families of youth with SB.

The Current Study

The current study sought to expand the limited knowledge on Latino youth with SB by examining psychosocial, familial, and acculturation factors (see Figures 1, 2, and 3). It is believed that findings from this study will inform future research questions, as well the development of evidenced-based, culturally-sensitive family interventions aimed at improving psychosocial functioning in this population.

The current study also sought to address several methodological issues that exist in studies to date. The use of (a) single methods (e.g., questionnaire report only), (b) single reporters (e.g., child-report only), (c) cross-sectional designs, and (d) bivariate data analytic strategies are among the most prominent weaknesses of current literature in this area. Using multiple methods and reporters has been encouraged within research in general, and the field of SB research specifically (Holmbeck et al., 2006). In addition, research that seeks to better understand psychosocial functioning and family functioning in youth with SB will be enhanced if it is firmly grounded within a developmental framework by considering how the management of a chronic illness is often at odds with the typical developmental changes of childhood and adolescence (Holmbeck et al., 2006; Kelly et al., 2008). One way to establish a developmental framework is to examine these processes over time using longitudinal data. Indeed, it has been recommended that research be conducted on family functioning in youth with SB using longitudinal moderation and mediation research designs to assess outcomes overtime (Holmbeck et

al., 2006; Holmbeck & Devine, 2010). By studying potential mechanisms of the relationship between family functioning and psychosocial functioning over time, findings can reveal not only *whether* differences exist between particular samples of youth with SB, but also *why* they exist. Thus, this study included (a) questionnaire and observational measures of family functioning, (b) youth-, mother-, father-, and teacher-reports, (c) longitudinal data to examine the impact of family functioning and acculturation on psychosocial functioning overtime, and (d) the use of moderation and mediation designs to assess differences across ethnic groups and the relationship between acculturation and psychosocial functioning as mediated by family functioning for Latino youth with SB (See Figures 1, 2, and 3).

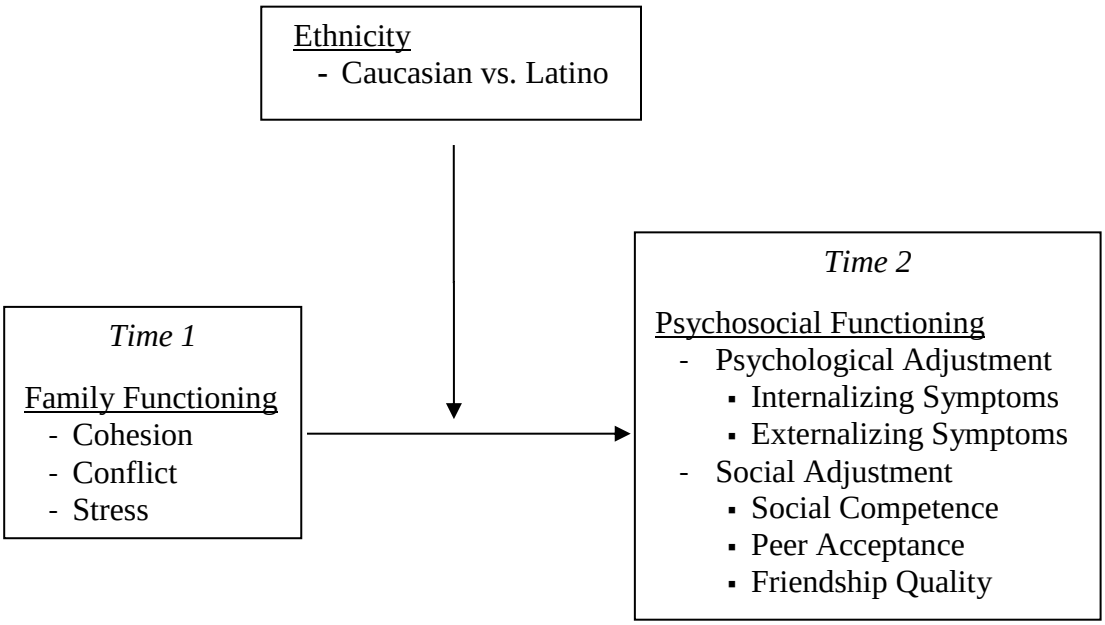
Study Hypotheses

The present study had four objectives. The ***first objective*** was to characterize psychosocial functioning in Latino youth with SB. It was hypothesized that compared to non-Latino Caucasian youth with SB, Latino youth with SB would demonstrate higher levels of internalizing and externalizing symptoms (***Hypothesis 1a***) and lower levels of social competence, peer acceptance, and friendship quality (***Hypothesis 1b***) at Time 1.

The ***second objective*** was to characterize family functioning in Latino youth with SB. It was hypothesized that compared to families of non-Latino Caucasian youth with SB, families of Latino youth with SB would demonstrate higher levels of family cohesion, lower levels of family conflict, and higher levels of family stress at Time 1 (***Hypothesis 2***).

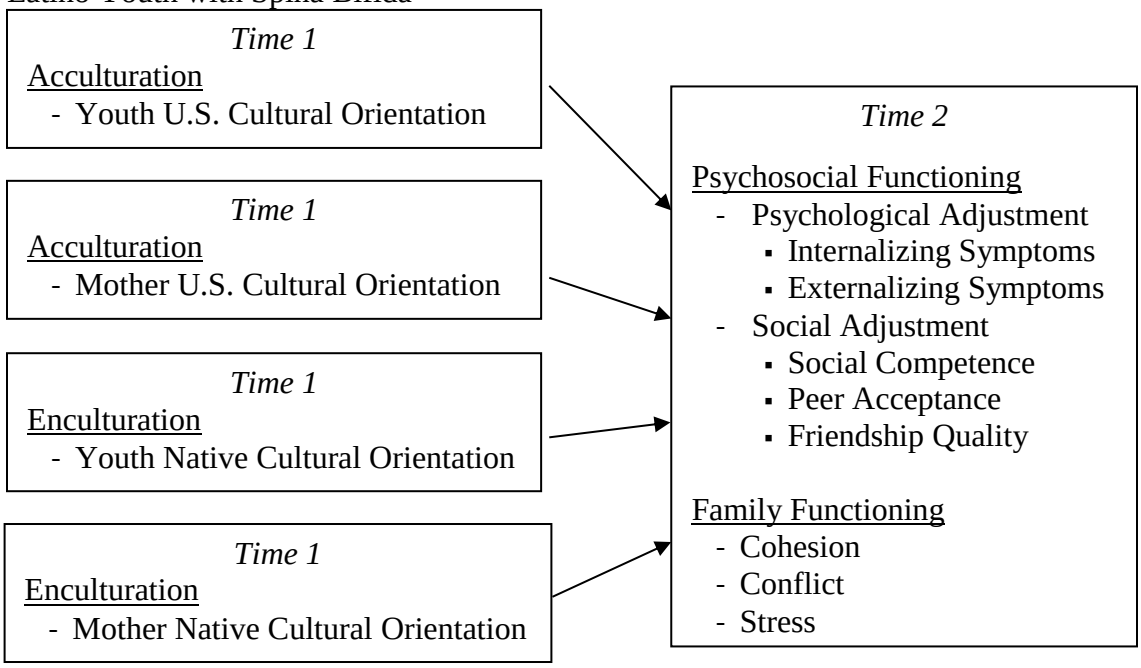
The ***third objective*** was to identify the relationship between family functioning and psychosocial functioning in Latino and non-Latino Caucasian youth with SB. It was hypothesized that, for both groups, greater family cohesion at Time 1 would predict lower levels of internalizing symptoms and externalizing symptoms, and higher levels of social competence, peer acceptance, and friendship quality at Time 2 (***Hypothesis 3a***). For both groups, it was hypothesized that greater family conflict and greater family stress at Time 1 would predict higher levels of internalizing and externalizing symptoms, and lower levels of peer acceptance, social competence, and friendship quality at Time 2 (***Hypothesis 3b***). Lastly, it was hypothesized that family functioning will be a stronger predictor of psychosocial functioning for Latino youth with SB compared to non-Latino Caucasian youth with SB (***Hypothesis 3c***; see Figure 1).

Figure 1. Moderation Model for Objective 3: Family Functioning as a Predictor of Psychosocial Functioning in Youth with Spina Bifida, as Moderated by Ethnicity



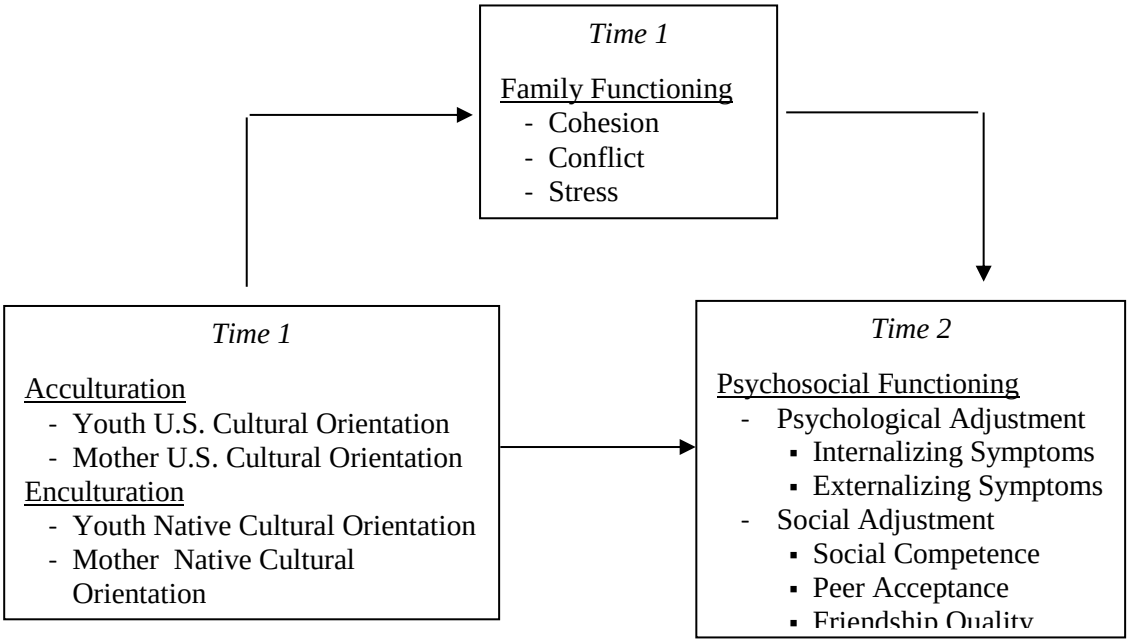
The ***fourth objective*** was to examine the relationship between acculturation, family functioning, and psychosocial functioning in Latino youth with SB. Specifically, it was examined whether acculturation at Time 1 (youth acculturation, youth enculturation, mother acculturation, and mother enculturation) predicted family functioning (family cohesion, family conflict, family stress) and psychosocial functioning (internalizing symptoms, externalizing symptoms, social competence, peer acceptance, friendship quality) at Time 2 (see Figure 2). It was hypothesized that higher levels of both youth and mother acculturation would predict less adaptive family functioning (lower levels of family cohesion; higher levels of family conflict and family stress) and poorer psychosocial functioning (higher levels of internalizing and externalizing symptoms; lower levels of social competence, peer acceptance, and friendship quality) (***Hypothesis 4a***). In addition, it was hypothesized that higher levels of both youth and mother enculturation would predict more adaptive family functioning and better psychosocial functioning (***Hypothesis 4b***).

Figure 2. Regression Models for Objective 4: Youth and Mother Acculturation and Enculturation as Predictors of Psychosocial Functioning and Family Functioning in Latino Youth with Spina Bifida



In addition, family functioning at Time 1 was examined as a mediator of the relation between acculturation at Time 1 (youth acculturation, youth enculturation, mother acculturation, and mother enculturation) and psychosocial functioning at Time 2 (see Figure 3). It was hypothesized that higher levels of both youth and mother acculturation would predict less adaptive family functioning which would, in turn, predict poorer psychosocial functioning (***Hypothesis 4c***). It was also hypothesized that higher levels of both youth and mother enculturation would predict more adaptive family functioning which would, in turn, predict better psychosocial functioning (***Hypothesis 4d).*** These mediation models were only conducted for those relationships that were significant for Hypotheses 4a and 4b.

Figure 3. Mediation Model for Objective 4: Acculturation as a Predictor of Psychosocial Functioning in Latino Youth with Spina Bifida, as Mediated by Family Functioning



Exploratory analyses were also conducted to examine an alternate mediation model: acculturation was tested as a mediator between family functioning and psychosocial functioning. These mediation models were only conducted for those relationships that were significant for Hypotheses 4a and 4b.

CHAPTER THREE

METHODS

Participants

Participants were recruited from an ongoing longitudinal study examining family relationships, peer relationships, neuropsychological functioning, and psychological adjustment (see Devine, Holbein, et al., 2012; Devine, Holmbeck, et al., 2012; Psihogios & Holmbeck, 2013). The current study focused on psychosocial functioning and family functioning in youth with SB at Time 1 and two years later at Time 2. Families of youth with SB were recruited from four hospitals and a statewide SB association in the Midwest. Families were sent recruitment letters and were also approached during regularly scheduled clinic visits. Interested families were screened by phone or in-person by a member of the research team, and were invited to participate if their child met the following criteria: (a) diagnosis of SB (types included myelomeningocele, lipomeningocele, myelocystocele); (b) age 8–15 years at Time 1; (c) ability to speak and read English or Spanish; (d) involvement of at least one primary custodial caregiver; (e) residence within 300 miles of laboratory (to allow for home visits to collect data).

A total of 246 families were approached during recruitment, of which 163 agreed to participate. However, of those 163 families, 21 families could not be contacted or later declined, and 2 families did not meet inclusion criteria. The final sample of participants included 140 families of children with SB (53.6% female; *M* age = 11.53). Of these 140

children, 52.9% were Caucasian, 27.9% were Latino, 13.6% were African American, and 5.6% were of another ethnicity. Latino families were oversampled to better study this population of youth with SB. The families who declined participation did not differ from those who agreed to participate participation with respect to type of SB (myelomeningocele vs. other) [χ^2 (1) = 0.0002, *ns*], shunt status [χ^2 (1) = 0.003, *ns*], or occurrence of shunt infections [χ^2 (1) = 1.08, *ns*]. Two waves of data collection were conducted two years apart, starting at ages 8-15 at Time 1 and ages 10-17 at Time 2. Data were collected at Time 2 for 111 (79%) of the original 140 participants. Reasons for attrition at Time 2 (*n* = 29): 16 participants declined to participate, 12 participants were unable to be contacted, and 1 participant was deceased.

Of the 140 families who participated at Time 1, analyses were limited to youth who reported Latino (*n* = 39) or non-Latino Caucasian (*n* = 74) ethnicity (total *N* = 113). Youth demographic and SB information is presented in Table 1. Within the Latino sample, 39 (100%) youth were born in the United States. Twenty-three (59%) mothers were born outside of the United States, 9 (23.1%) were born in the United States, and 7 (17.9%) did not report their country of birth. Of the 23 mothers born outside of the United States, 20 were born in Mexico, 2 were born in Ecuador, and 1 was born in Uruguay. Twenty (51.3%) fathers were born outside of the United States, 6 (15.4%) were born in the United States (15.4%), and 13 (33.3%) did not report their country of birth. Of the 20 fathers born outside of the United States, 17 were born in Mexico, 2 were born in Ecuador, and 1 was born in Uruguay.

Table 1. Youth Demographic and Spina Bifida Information at Time 1, by Ethnicity

	Total *M* (SD) or N (%)	Non-Latino Caucasian *M* (SD) or N (%)	Latino *M* (SD) or N (%)	Non-Latino Caucasian vs. Latino
Participants	113(100%)	74(65.5%)	39(33.5%)	
Age	11.53(2.41)	11.31(2.34)	11.95(2.53)	t (111) = –1.34^{ns}
Gender: male	54(47.8%)	35(47.3%)	19(48.7%)	χ^2 (1) = 0.02^{ns}
Spina bifida type				
Myelomeningocele	98(86.7%)	64(86.5%)	34(87.2%)	χ^2 (1) = 0.01^{ns}
Lipomeningocele	7(6.2%)	4(5.4%)	3(7.7%)	
Other	7(6.2%)	6(8.1%)	1(2.6%)	
Unknown/not reported	1(.9%)	0(0%)	1(2.6%)	
Lesion level				
Thoracic	21(18.6%)	11(14.9%)	10(25.6%)	χ^2 (1) = 2.16^{ns}
Lumbar	54(47.8%)	37(50.0%)	17(43.6%)	
Sacral	34(30.1%)	24(32.4%)	10(25.6%)	
Unknown/not reported	4(3.5%)	2(2.7%)	2(5.2%)	
Shunt present	88(77.9%)	56(75.7%)	32(82.1%)	χ^2 (1) = 0.60^{ns}
IQ [a]	86.83(0.12)	92.41(19.87)	75.83(15.78)	t (105) = 4.35***
Family SES [b]	40.07(16.35)	46.95(13.52)	25.29(11.43)	t (105) = 8.09***

Note. [a] n = 107 for the total sample due to missing data (Non-Latino Caucasian n = 71; Latino n = 36); [b] n = 107 for the total sample due to missing data (Non-Latino Caucasian n = 73; Latino n = 34); SES = socioeconomic status measured by Hollingshead Four Factor Index. ***p <.001, ^{ns} not significant.

Of the 39 Latino families, 28 (71.8%) reported that the primary language spoken at home was Spanish; the remaining 11 (28.2%) families reported that English was the primary language spoken at home.

At Time 2, 26 of the 39 (67%) Latino families participated and 63 of the 74 (85%) non-Latino Caucasian families participated (total $N = 89$ at Time 2). Youth who did not participate at Time 2 ($n = 24$) did not significantly differ from youth who did with respect to gender, type of SB (myelomeningocele or other), lesion level (thoracic or other), shunt status, or IQ. However, youth who did not participate at Time 2 were significantly older at Time 1 [$M = 12.46$ compared to 11.28; t (111) = 2.16, $p = .03$] and from families of lower socioeconomic status at Time 1 [$M = 32.84$ compared to 41.63; t (105) = -2.16, $p = .03$]. Among youth who did not participate at Time 2, Latino youth had a significantly lower IQ at Time 1 [$M = 69.67$ compared to 96.45; t (21) = 3.59, $p = .002$] and were from families of lower socioeconomic status at Time 1 [$M = 19.22$ compared to 45.10; t (17) = 4.71, $p = .000$], compared to non-Latino Caucasian youth. Finally, among Latino youth, there were no significant differences between those who did and did not participate at Time 2 with respect to age, gender, type of SB, lesion level, shunt status, IQ, or SES.

Procedure

The current study was approved by university and hospital Institutional Review Boards and utilized a multi-method, multi-informant longitudinal research design. Data were collected by trained undergraduate and graduate student research assistants during home visits that lasted approximately three hours. At Time 1, two 3-hours home visits were conducted, and two years later at Time 2, only one 3-hour home visit was conducted

due to a shortened protocol. For home visits with families who primarily spoke Spanish in the home, at least one research assistant was bilingual. Informed consent from parents and assent from youth were obtained prior to the start of the first visit. Parents completed releases of information to allow for data collection from medical charts, health professionals, and teachers. The larger study involved youth, parent, teacher, health professional, and peer questionnaires; youth, parent, and peer interviews; youth neuropsychological testing; video-recorded family interaction tasks of the child and his/her parent(s); and video-recorded peer interaction tasks of the youth and his/her friend. Parents completed identical questionnaires separately. Questionnaires that were only available in English were adapted for Spanish speakers using forward and back translation by a translation team from the University of Houston (J. Fletcher, Personal Communication, 2005). The current study used youth-, parent-, and teacher -reported questionnaire data and observational data of family interaction tasks. Families received $150, a t-shirt, a water bottle, and a pen as compensation for participation at each time point.

Measures

Covariates

Demographics. Parents reported on youth and family demographic information through questionnaires. Parents reported on child age, gender, and race/ethnicity. Parents also reported on their gender, race/ethnicity, education, employment, and income. The Hollingshead Index of socioeconomic status (SES) was computed to assess SES

based on parents' education and occupation, with higher scores indicating higher SES (Hollingshead, 1975).

Youth medical information. Data regarding youth's type of SB (i.e., myelomeningocele, lipomeningocele, or other), lesion level (i.e., thoracic, lumbar, or sacral), and shunt status were primarily drawn from medical charts, but in cases where such data were missing, data were drawn from the Medical History Questionnaire (MHQ; Holmbeck et al., 2003) completed by parents.

Youth IQ. Youth were administered the Vocabulary and Matrix Reasoning subtests of the Wechsler Abbreviated Scale of Intelligence (WASI; Wechsler, 1999), to compute an estimated full scale IQ (FSIQ). The WASI is a well-validated measure of child intelligence with normative means of 100 and standard deviations of 15. The Vocabulary subtest is a 42-item task used to measure child's expressive vocabulary, verbal knowledge, and fund of knowledge. The Matrix Reasoning subtest is a 35-item task used to measure nonverbal fluid reasoning and general intellectual ability. These subtests have demonstrated high levels of internal consistency for youth 6-16 years old (α = .89 for Vocabulary, α = .92 for Matrix Reasoning; Wechsler, 1999).

Youth Psychosocial Functioning

Youth psychosocial functioning was assessed by examining psychological adjustment and social adjustment constructs. Specifically, psychological adjustment was assessed by examining *internalizing* and *externalizing symptoms*. In addition, according to Cavell (1990), social adjustment is the degree to which an individual is achieving developmentally appropriate goals, and may be measured by *perceived social*

competence, peer acceptance, and *quality of friendships* (Devine, Holmbeck, et al., 2012) ; thus, these three social adjustment constructs were examined in the current study.

Internalizing and externalizing symptoms. Youth completed the Children's Depression Inventory (CDI; Kovacs, 1992). This is a 27-item self-rated measure of depression for children, which has been well-validated for the general population and has also been used with SB populations (Friedman et al., 2004). Each item consists of three choices that are rated as 0, 1, or 2, with higher scores indicating increased severity (α = .80).

Parents completed the Child Behavior Checklist (CBCL) and teachers completed the teacher version (Teacher Report Form; TRF; Achenbach & Rescorla, 2001). The CBCL and TRF contain 118 items that describe behavioral and emotional problems, rated on a 3-point scale (0 = "not true," 1 = "somewhat true," and 2 = "very true"). The CBCL and TRF yield T-scores on Internalizing and Externalizing Problems subscales, which will be used for this study. In a previous study of children with SB and a matched comparison sample (Holmbeck, et al., 2003), 23.5% and 7.4% of the spina bifida sample had mean T-scores of 60 or above on the Internalizing and Externalizing scales, respectively. Percentages for the comparison sample were 7.4% and 7.4%, respectively.

Perceived social competence. Youth completed the Children's Self Efficacy for Peer Interaction Scale (CSPI; Wheeler & Ladd, 1982), which assesses youth's perceived self-efficacy in social situations. The scale consists of 22 items describing a social situation (e.g. "Some kids want to play a game"), and is followed by an incomplete statement requiring the respondent to evaluate his/her ability to perform a verbal

persuasive skill (e.g. "Asking them if you can play is _____ for you"). The respondent answers each item using a 4-point scale (1 = "very hard" and 4 = "very easy"), which yields a total score, with higher scores indicating greater self-efficacy. For this study, four items were dropped because the wording (e.g., "using your play area") was not age appropriate ($\alpha = .88$).

Parents completed the Social Competence subscale from the CBCL (see previous description of CBCL; Achenbach, 1991), which contains 9 items regarding: a) participation in organizations, clubs, teams, or groups, b) number of close friends, c) amount of time spent with friends outside of regular school hours, and d) behavior with others (i.e. how well the child gets along with their brothers and sisters, other kids, their parents) and behavior when alone (i.e., how well the child does things by themselves). Previous research has shown the internal consistency alpha of the Social Competence subscale to be .68 in TD youth (Achenbach & Rescorla, 2001).

Peer acceptance. Youth, parents, and teachers completed the Social Acceptance subscale from the appropriate reporter versions of Harter's (1985) Self-Perception Profile for Children Scale (SPPC) to assess youth acceptance by peers; youth completed the What I Am Like, (WIAL-C), parents completed the Parent's Rating Scale of Child's Actual Behavior (PRSCAB), and teachers completed the Teacher's Rating Scale of Child's Actual Behavior (TRSCAB). All three versions consist of items for which the respondent is asked to identify which of two statements best describes the youth (e.g., "My child finds it hard to make friends" or "For my child it's pretty easy"), and then to decide whether the statement is "really true" or "sort of true." The child version subscale

consists of 6 items (α = .62) and the parent and teacher version subscales consist of 3 items (α's = .65, .66, and .76 for mother-, father-, and teacher-report, respectively), with higher scores (range of 1 to 4) indicating greater peer acceptance.

Friendship quality. Youth completed the Friendship Activity Questionnaire (FAQ) based on the Friendship Qualities Scale (FQS; Bukowski, Hoza, & Boivin, 1994). The FAQ consists of 46 items across five scales of friendship qualities: companionship (e.g., "My friend and I spend a lot of our free time together"), conflict (e.g., "I can get into fights with my friend"), help (e.g., "If other kids were bothering me, my friend would help me"), security (e.g., "If I have a problem at school or at home, I can talk to my friend about it"), and closeness (e.g., "I think about my friend even when my friend is not around"). Respondents are asked to rate how true each statement is for his/her closest friendship on a five-point scale (1 = "not true" and 5 = "really true"), with higher scores indicating better friendship quality (α = .93).

Youth also completed the Emotional Support Questionnaire Scale (ESQ; Slavin, 1991) to assess peer social support. This measure asks youth to nominate three individuals from each of the three categories: family members, non-family adults, and peers. Respondents rate each relationship on 4 items: how much they talk about personal concerns, how close they feel to the individual, how much the individual rated talks to the respondent, and how satisfied they are with the support they receive. The following 3 items were added for this study: how much do the respondent and the other individual get upset with or mad at each other, how much does the respondent play around and have fun with the other individual, and how sure the respondent is that this relationship will last no

matter what. Respondents are asked to rate each item on a four-point scale (1 = "hardly at all" and 4 = "very true"). The current study utilized data on how respondents rate their peer relationships by computing a total score by averaging items across those 7 items (α = .89).

Family Functioning

Family functioning was assessed by examining the domains of family cohesion, family conflict, and family stress. Most studies examining family functioning have focused on these three domains because of the vital impact they have on child outcomes (Cox & Brooks-Gunn, 1999).

Family cohesion and family conflict. Parents completed the Family Environment Scale-Revised (FES-R; Moos & Moos, 1994), which assesses perceptions of social and environmental characteristics of the family. The FES-R includes 3 dimensions, comprising a total of 10 subscales. The current study utilized the Cohesion and Conflict subscales from the Relationship domain. The Cohesion subscale consists of 9 items and assesses the degree of commitment, help, and support family members provide for one another (e.g., "Family members really help and support one another"). The Conflict subscale consists of 9 items and assesses the amount of openly expressed anger, aggression, and conflict between family members (e.g., "We fight a lot in my family"). The FES-R asks respondents to indicate "True" or "False" for each item. However, in this study, items were rated using a 4-point scale (1 = "Strongly Disagree" and 4 = "Strongly Agree"), with higher scores indicating greater cohesion/conflict

(cohesion: α's = 0.67 and 0.69 for mother- and father-report, respectively; conflict: α's = 0.71 and 0.75 for mother- and father-report, respectively).

Families (mother, father, and youth) completed a set of video-recorded interaction tasks designed to generate family interaction and discussion. These structured tasks were counter-balanced and included a warm-up game, a discussion of two age-appropriate vignettes, a discussion of transferring disease-specific responsibilities to the child, and a discussion of identified family conflicts. In the vignettes task, families were given two age-appropriate vignettes of situations (one specific to youth with SB) that adolescents might typically encounter, and were asked to discuss possible resolutions to these situations. In the transferring of responsibilities task, families were asked to discuss one to two responsibilities that could be transferred from the parent to the child (e.g., independent catheterization). In the conflict task, each family member was first asked to complete the Parent-Adolescent Conflict Scale (PAC; Prinz, Foster, Kent, & O'Leary, 1979), a 15-item adaptation of the original scale that assesses the occurrence of common issues (e.g., "Whether he/she does chores around the house) between the parent and child. Ten items specific to SB (e.g., "How he/she does his/her skin checks") were added for the current study, for a total of 25 items. Respondents indicated whether the issue was discussed within the past two weeks ("yes/no"), if yes how often (1 = "not often" and 4 = "very often"), and, if yes, how "hot" the discussion was (1 = "calm and 5 = "very angry"). Families were then presented with the five issues that they rated as most common and intense, and were asked to discuss and attempt to resolve three or more of these issues. Families were given 10 minutes to complete each of these tasks.

These video-recorded interactions, with the exception of the game task, were coded using a global-coding method called the Family Interaction Macro-coding System (FIMS; Kaugars et al., 2011). Coded items assess interaction style, conflict, affect, control, and problem solving at the individual-, dyadic- (mother/father, mother/child, father/child), and systemic-level (family) using 5-point ratings. For example, the item assessing ‘‘Warmth’’ captures signs of positive connection in a dyadic relationship as shown through verbal or nonverbal behaviors (1 = “very cold” and 5 = “very warm”). The Family Cohesion and Family Conflict subscales were examined in this study. The Family Cohesion subscale includes the following 7 items: Requests Input (dyadic), Involvement (individual), Collaboration (systemic), Openness (systemic), Reaches Agreement (systemic), Parents Present as United Front (systemic), and Disengagement (systemic, reverse-coded; $\alpha = .90$). The Family Conflict subscale consists of the following 3 items: Conflict (dyadic), Disagreement (systemic), Attempts Resolution (individual; reverse-coded; $\alpha = .81$; Kaugars et al., 2011).

Family stress. Parents completed the Family Stress Scale (FSS; Quittner, Glueckauf, & Jackson, 1990), which consists of 19 items to assess common stressors in families of a child with SB. Thirteen items are non-disease specific (e.g., “mealtimes and bedtimes”) and 6 items are disease-specific (e.g., “medical care/appointments”). Items are rated using a 5-point scale (1 = “not at all stressful” and 5 = “extremely stressful”), with higher scores indicating higher levels of stress (α’s = 0.83 and 0.93 for mother- and father-report, respectively).

Acculturation

Parent generational status. Parents completed the Generational Status questionnaire, an 8-item measure adapted from the AHIMSA Acculturation Scale (Unger et al., 2002) to assess parents' generational history, including birth country, time of immigration to the U.S., and family history of immigration. Information of parent's birth country was analyzed descriptively in the current study.

Parent and child acculturation and enculturation. Parents completed the Acculturation Scales-P about themselves and the Child Acculturation Scale-P about their child, adapted from the Brief Acculturation Rating Scale for Mexican Americans-II (ARSMA-II; Bauman, 2005). The Acculturation Scales ask about country of origin and native language, and contain 6 items from the Anglo Oriented Scale (AOS; e.g., "I speak English") and 6 items from the Mexican Oriented Scale (MOS; "I enjoy watching TV in my family's native language") of the ARSMA-II. This study is conceptualizing the AOS scale as a measure of *acculturation*, and the MOS scale as a measure of *enculturation.* Respondents answer items using a 5-point scale (1 = "not at all" to 5 = "almost always/extremely often"), with higher scores indicating a higher endorsement of value/behavior. Average AOS and MOS scores are computed for both child (mother-report) and mother, for a total of four scores (child AOS $\alpha = 0.62$; child MOS $\alpha = 0.91$; mother AOS $\alpha = 0.88$; mother MOS $\alpha = 0.84$). Father-report was not included in analyses due to missing data for this measure (missing $n = 24$ of 39 participating Latino youth).

Statistical Treatment

Preliminary Analyses

Prior to hypotheses testing, the psychometric properties of all measures were evaluated. This included determining whether data contained outliers or variables were skewed. Data transformation and reduction techniques were used when appropriate. To reduce the number of potential analyses, either Pearson correlation coefficients (for two reporters) or Cronbach's alpha coefficients (for three or more reporters, with scales treated as individual items in a reliability analysis) were computed to assess associations among multiple reporters for the following measures: mother-, father-, and teacher-report of internalizing and externalizing symptoms on the CBCL/TRF; mother- and father-report of social competence on the CBCL; youth-, mother-, father-, and teacher-report of peer acceptance on the SPPC scales; mother- and father-report of family cohesion on the FES-R; mother- and father-report of family conflict on the FES-R; mother- and father-report of family stress on the FSS. Further, Pearson correlation coefficients were computed to assess associations among data from multiple measures for each construct. This includes the following: the CDI and CBCL for internalizing symptoms; the CSPI and CBCL for social competence; the FAQ and ESQ for friendship quality; the FES-R and FIMS for family cohesion; the FES-R and FIMS for family conflict. If data were significantly correlated ($r > .4$, $p < .05$) or had adequate internal consistency ($\alpha > .6$) at both T1 and T2, composite scores were created. However, if data were *not* significantly correlated at both time points, analyses were conducted separately.

Descriptive statistics (see Table 1) revealed there was a significant difference in IQ and SES between Latino and non-Latino Caucasian families. The difference in SES between groups is meaningful, as SES and ethnicity are intertwined (Devine, Holbein, et al., 2012). The inclusion of SES as a covariate attempts to answer the question of whether group differences would exist if the two groups were not different in SES. However, removing the variance in outcomes due to SES would also remove shared variance in the group variable (Latino vs. non-Latino Caucasian) that is associated with the dependent variables (Miller & Chapman, 2001). In addition, IQ is also intertwined with ethnicity and SES in this population (Swartwout et al., 2009). Therefore analyses were conducted (1) with both IQ and SES as covariates, (2) with SES as a covariate, (3) with IQ as a covariate, and (4) without covariates.

Hypothesis Testing

Analytic plan for objectives 1 and 2. Group differences (Latino vs. non-Latino Caucasian) at Time 1 were conducted via analyses of covariance (ANCOVAs) and multivariate analyses of covariance (MANCOVAs) with univariate follow-up. Group differences were not examined at Time 2 because the present study did not make hypotheses regarding potential differences when youth are, on average, two years older than at Time 1. For Objective 1, four MANCOVAs and one ANCOVA were conducted for youth psychological adjustment: internalizing symptoms (four dependent variables), externalizing symptoms (two dependent variables), social competence (two dependent variables), peer acceptance (one dependent variable), and friendship quality (two dependent variables). For Objective 2, two MANCOVAs and one ANCOVA were

conducted for family functioning: family cohesion (2 dependent variables), family conflict (2 dependent variables), and family stress (1 dependent variable). Assuming a power of .80, and an alpha of .05, a sample of 26 is required to detect large effect sizes (η^2 = .40) and a sample size of 64 is required to detect medium effect sizes (η^2 = .25) for analyses with 2 groups (Cohen, 1992). Thus, the current study had enough power to detect medium to large effect sizes.

Analytic plan for objective 3. Longitudinal hierarchical regression analyses testing moderation effects were conducted to determine if the effects of family functioning at Time 1 (family cohesion, family conflict, and family stress) on youth psychosocial outcomes at Time 2 (internalizing symptoms, externalizing symptoms, perceived social competence, peer acceptance, and friendship quality) varied significantly as a function of whether youth are Latino or non-Latino Caucasian. Such analyses were based on methods outlined by Aiken and West (1991), and Holmbeck (1997, 2002). Specifically, a separate regression analysis was conducted for each family functioning variable predicting each psychosocial outcome. Variables were entered simultaneously within the following steps: (1) Time 1 psychosocial outcome, (2) Time 1 covariates (IQ, SES), (3) Time 1 family functioning predictor, (4) Time 1 family functioning predictor X ethnic group interaction. This model was also run without including SES, IQ, and neither SES nor IQ as a covariate in step 2, for reasons provided previously. Assuming a power of .80, and an alpha of .05, a sample of 42 is required to detect large effect sizes (R^2 = .35) and a sample size of 91 is required to detect medium effect sizes (R^2 = .15) for

analyses with 5 predictors (Cohen, 1992). Thus, the current study had enough power to detect medium to large effect sizes.

Analytic plan for objective 4. For Latino youth only, longitudinal hierarchical regression analyses were conducted to determine whether youth and mother acculturation and enculturation at Time 1 predicted family functioning (family cohesion, family conflict, and family stress) and youth psychosocial functioning (internalizing symptoms, externalizing symptoms, perceived social competence, peer acceptance, and friendship quality) at Time 2, while controlling for family functioning or psychosocial functioning at Time 1. Assuming a power of .80, and an alpha of .05, a sample of 30 is required to detect large effect sizes (R^2 = .35) for analyses with 2 predictors (Cohen, 1992). However, due to missing data (*n* = 26 at Time 2), the current study did not have enough power to detect large effect sizes.

Further, Preacher and Hayes' (2008) bootstrapping methods were employed to determine the impact of youth and mother acculturation and enculturation at Time 1 on youth psychosocial functioning at Time 2, as mediated by family functioning at Time 1. This same approach was also used to test the exploratory mediation model of youth and mother acculturation and enculturation as mediators of the association between family functioning and psychosocial functioning. Bootstrapping has been validated in the literature and is preferred over other methods, such as the Sobel Test (Preacher & Hayes, 2008). The Sobel Test (Sobel, 1982) uses a normal approximation which presumes a symmetric distribution. Because it falsely presumes symmetry, it is a more conservative test, yielding very low power (Hayes, 2009; MacKinnon, Warsi, & Dwyer, 1995). With

bootstrapping, there are fewer parameter estimates and power remains high, which reduces the possibility of Type II errors (Preacher & Hayes, 2008). This procedure generates an empirical approximation of the product of the estimated coefficients' sampling distribution in the direct path, percentile-based bootstrap confidence intervals (CI), and bootstrap measures of standard errors using 5,000 resamples, with replacement, from the dataset (Preacher & Hayes, 2008). When zero is not between the upper and lower bounds of the confidence interval, it can be claimed with 95% confidence that the indirect effect is not zero, indicating a significant indirect effect. A total of four models were run, one for each acculturation and enculturation score (i.e., youth AOS, youth MOS, mother AOS, mother MOS) at Time 1, predicting a psychosocial functioning composite at Time 2, mediated by a family functioning composite at Time 1, and while controlling for psychosocial functioning at Time 1. Assuming a power of .80, and an alpha of .05, a sample size of 36 is required to detect large effect sizes (Fritz & MacKinnion, 2007). However, due to missing data (n = 26 at Time 2), the current study did not have enough power to detect large effect sizes. Therefore, all mediation analyses were interpreted as exploratory in nature.

CHAPTER FOUR

RESULTS

Preliminary Analyses

All variables were examined for outliers, but none were identified. In addition, all independent and dependent variables were tested for skewness. As recommended by Tabachnick & Fidell (2013), a conservative approach was utilized and variables were considered skewed and were transformed if skewness values were greater than 1.0. In addition, if a variable was skewed at one time point, it was transformed at both time points. Results indicated that three variables were positively skewed: child-report on the CDI at T1 (skewness value = 1.269); mother-report of family stress at T2 (skewness value = 1.046); father-report of family stress at T1 (skewness value = 1.139). Mother- and father-reports of family stress at T1 and T2 were transformed using square root transformation. Child-report on the CDI at T1 and T2 were first transformed using square root transformation. However, this variable at T1 continued to be skewed (skewness value = 1.013). Therefore, log transformation was used for this variable at both T1 and T2.

Preliminary analyses included an examination of the association among multiple reporters of measures, and among multiple measures for each construct. Results indicated that the following variables were significantly correlated or demonstrated adequate internal consistency at each time point, so were averaged together at each time point:

mother- and father-report of externalizing symptoms on the CBCL at T1 (r = .57, p < .001) and T2 (r = .69, p < .001); mother- and father-report of social competence on the CBCL at T1 (r = .59, p < .001) and T2 (r = .62, p < .001); mother-, father-, teacher-, and child-report of peer acceptance on the Harter at T1 (α = .61) and T2 (α = .64); mother- and father-report of family cohesion on the FES at T1 (r = .49, p < .001) and T2 (r = .43, p < .001); mother- and father-report of family conflict on the FES at T1 (r = .63, p < .001) and T2 (r = .48, p < .001); mother- and father-report of family stress on the FSS at T1 (r = .44, p < .001) and T2 (r = .62, p < .001). Table 2 displays correlations among psychosocial adjustment variables and covariates at Time 1 for the full sample, and Table 3 displays correlations among family functioning variables and covariates at Time 1 for the full sample.

As expected, there was a significant difference in IQ between non-Latino Caucasian (M = 92.41, SD = 19.87) and Latino (M = 75.83, SD = 15.78) youth; t(105) = 4.35, p = .000. There was also a significant difference in SES between non-Latino Caucasian (M = 46.95, SD = 13.52) and Latino (M = 25.29, SD = 11.43) youth; t(105) = 8.09, p = .000. Therefore, as previously stated, analyses were conducted (1) with both SES and IQ as covariates, (2) with SES as a covariate, (3) with IQ as a covariate, and (4) without covariates.

Table 2. Correlations among Psychosocial Functioning Variables and Covariates at Time 1 for Full Sample

Variable	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.
Internalizing													
1. CBCL (M)	–	.41***	.10	.24*	.42***	.16	–.33**	–.12	–.29**	–.13	.00	–.13	–.11
2. CBCL (F)		–	.11	.22	.46***	–.05	–.09	–.10	–.18	.14	–.08	–.10	–.05
3. CBCL (T)			–	.22*	–.12	.57***	–.31**	–.13	–.53***	–.03	–.11	–.29**	–.20
4. CDI (Y) [a]				–	.31**	.34**	–.29**	–.12	–.32**	–.01	–.10	–.35***	–.22*
Externalizing													
5. CBCL (M/F)					–	.05	–.04	–.01	.02	.01	.04	–.04	–.04
6. CBCL (T)						–	–.18	–.06	–.52***	.01	–.00	–.22*	–.07
Social Competence													
7. CBCL (M/F)							–	.26*	.46***	.04	.17	.53***	.42***
8. CSPI (Y)								–	.30**	.18	.26*	.26**	.15
Peer Acceptance													
9. Harter (M/F/T/Y)									–	.11	.26*	.38***	.16
Friendship Quality													
10. FAQ (Y)										–	.39***	–.05	–.01
11. ESQ (Y)											–	.19	.03
12. IQ [b]												–	.50***
13. SES [b]													–

Note. CBCL = Child Behavior Checklist; CDI = Children's Depression Inventory; CSPI = Children's Self-Efficacy for Peer Interaction Scale; Harter = Harter Social Acceptance subscale; FAQ = Friendship Activity Questionnaire; ESQ = Emotional Support Questionnaire; FIMS = Family Interaction Macro Coding Scale (observational data); FES = Family Environment Scale; FSS = Family Stress Scale; IQ = WASI estimated full-scale IQ; SES = socioeconomic status measured by Hollingshead Four Factor Index; M = mother-report; F = father-report; T = teacher-report; Y = youth-report. [a]This variable was log transformed to correct for skewness. [b]These variables are covariates. *$p < .05$, ** $p < .01$, ***$p < .001$.

Table 3. Correlations among Family Functioning Variables and Covariates at Time 1 for Full Sample

Variable	1.	2.	3.	4.	5.	6.	7.
Family Cohesion							
1. FIMS	–	.10	–.38***	–.10	–.20*	.30**	.38***
2. FES (M/F)		–	–.06	–.60***	–.30**	.02	.02
Family Conflict							
3. FIMS			–	.05	.13	–.05	–.17
4. FES (M/F)				–	.36***	.17	.11
Family Stress							
5. FSS (M/F) [a]					–	.02	–.08
6. IQ [b]						–	.50***
7. SES [b]							–

Note. FIMS = Family Interaction Macro Coding Scale (observational data); FES = Family Environment Scale; FSS = Family Stress Scale; IQ = WASI estimated full-scale IQ; SES = socioeconomic status measured by Hollingshead Four actor Index; M = mother-report; F = father-report. [a]This variable was square root transformed to correct for skewness. [b]These variables are covariates. *$p < .05$, ** $p < .01$, ***$p < .001$.

Hypothesis Testing

Objective 1

The first objective of this study was to characterize psychosocial functioning in Latino youth with SB, including psychological adjustment (Objective 1a) and social adjustment (Objective 1b). Table 4 displays results and the non-adjusted means for each variable. Non-adjusted means represent the mean of all available data for each variable. Adjusted means are presented in text, and represent the mean of data that is included in analysis after inclusion of covariates.

Objective 1a. It was hypothesized that compared to non-Latino Caucasian youth with SB, Latino youth with SB would demonstrate higher levels of internalizing and

externalizing symptoms. There were no significant differences in internalizing symptoms between groups. However, results revealed that when controlling for both IQ and SES, there was a significant difference in externalizing symptoms between groups, F (2, 82) = 3.79, $p < .05$. Follow-up univariate analyses revealed a significant difference in teacher-reported externalizing symptoms on the CBCL, F (1, 83) = 7.34, $p < .01$. However, contrary to the hypothesis, compared to non–Latino Caucasian youth (adjusted M = 51.42), Latino youth (adjusted M = 48.92) were reported to demonstrate fewer externalizing symptoms.

Objective 1b. It was hypothesized that compared to non-Latino Caucasian youth with SB, Latino youth with SB would demonstrate lower levels of social competence, peer acceptance, and friendship quality. Results partially supported this hypothesis. There were no significant differences in peer acceptance or friendship quality between groups. However, results revealed that when controlling for IQ, there was a significant difference in social competence between groups F (2, 88) = 4.70, $p < .05$. Follow-up univariate analyses revealed a significant difference in parent-reported social competence on the CBCL, F (1, 93) = 7.47, $p < .01$. Specifically, compared to non–Latino Caucasian youth (adjusted M = 46.42), Latino youth (adjusted M = 38.11) were reported to demonstrate less social competence. These results were also found when *not* controlling for IQ.

Objective 2

The second objective of this study was to characterize family functioning in Latino youth with SB. See Table 4 for results.

Table 4. Group Means and Standard Deviations for Study Variables with MANCOVA and Univariate ANCOVA Follow-Up Findings at Time 1

Study Variable	Non-Latino Caucasian	Latino	No Covariates	IQ Controlled	SES Controlled	IQ & SES Controlled
			Multi / Uni	Multi / Uni	Multi / Uni	Multi / Uni
	M(SD)	*M*(SD)				
Internalizing Symptoms			$F(4, 61)=1.06^{ns}$	$F(4, 60)=0.41^{ns}$	$F(4, 40)=0.38^{ns}$	$F(4, 59)=1.16^{ns}$
CBCL (M)	55.44(9.11)	57.26(11.50)	*ns*	*ns*	*ns*	*ns*
CBCL (F)	52.56(10.16)	54.45(11.82)	*ns*	*ns*	*ns*	*ns*
CBCL (T)	54.70(11.46)	58.78(6.55)	*ns*	*ns*	*ns*	*ns*
CDI (Y) [a]	.10(.06)	.13(.07)	*ns*	*ns*	*ns*	*ns*
Externalizing Symptoms			$F(2, 87)=0.80^{ns}$	$F(2, 83)=2.92^{ns}$	$F(2, 86)=2.31^{ns}$	$F(2, 82)=3.79$*
CBCL (M/F)	49.22(9.07)	48.33(9.92)	*ns*	$F(1, 91)=0.59^{NS}$	$F(1, 95)=0.74^{NS}$	$F(1, 90)=1.00^{NS}$
CBCL (T)	51.77(8.25)	49.74(6.86)	*ns*	$F(1, 84)=5.88$*	$F(1, 87)=4.27$*	$F(1, 83)=7.34$**
Social Competence			$F(2, 92)=13.39$***	$F(2, 88)=4.70$*	$F(2, 89)=2.84^{ns}$	$F(2, 86)=1.54^{ns}$
CBCL (M/F)	45.78(8.28)	37.53(8.00)	$F(1, 99)=21.75$***	$F(1, 93)=7.47$**	$F(1, 96)=4.72$*	*ns*
CSPI (Y)	2.76(.45)	2.77(.50)	$F(1, 99)=0.00^{ns}$	$F(1, 95)=1.20^{ns}$	$F(1, 94)=0.18^{ns}$	*ns*
Peer Acceptance			N/A	N/A	N/A	N/A
Harter (M/F/T/Y)	2.85(.32)	2.79(.33)	$F(1, 110)=0.91^{ns}$	$F(1, 103)=0.42^{ns}$	$F(1, 103)=0.01^{ns}$	$F(1, 98)=0.50^{ns}$
Friendship Quality			$F(2, 92)=0.09^{ns}$	$F(2, 88)=1.50^{ns}$	$F(2, 87)=0.72^{ns}$	$F(2, 84)=1.25^{ns}$
FAQ (Y)	3.71(.65)	3.73(.52)	*ns*	*ns*	*ns*	*ns*
ESQ (Y)	3.02(.61)	3.08(.59)	*ns*	*ns*	*ns*	*ns*
Family Cohesion			$F(2, 97)=1.76^{ns}$	$F(2, 93)=0.10^{ns}$	$F(2, 94)=0.54^{ns}$	$F(2, 91)=1.79^{ns}$
FIMS	3.46(.36)	3.30(.42)	*ns*	*ns*	*ns*	*ns*
FES (M/F)	3.09(.33)	3.11(.31)	*ns*	*ns*	*ns*	*ns*
Family Conflict			$F(2, 97)=2.42^{ns}$	$F(2, 93)=1.74^{ns}$	$F(2, 94)=8.72$***	$F(2, 91)=7.97$**
FIMS	1.97(.43)	1.84(.35)	*ns*	*ns*	$F(1, 102)=17.31$***	$F(1, 99)=16.44$***
FES (M/F)	2.10(.37)	1.99(.31)	*ns*	*ns*	$F(1, 97)=1.47^{ns}$	$F(1, 92)=0.64^{ns}$
Family Stress			N/A	N/A	N/A	N/A
FSS (M/F) [b]	1.40(.18)	1.38(.20)	$F(1, 100)=0.46^{ns}$	$F(1, 94)=0.39^{ns}$	$F(1, 97)=4.01^{ns}$	$F(1, 92)=2.67^{ns}$

Note. CBCL = Child Behavior Checklist; CDI = Children's Depression Inventory; CSPI = Children's Self-Efficacy for Peer Interaction Scale; Harter = Harter Social Acceptance subscale; FAQ = Friendship Activity Questionnaire; ESQ = Emotional Support Questionnaire; FIMS = Family Interaction Macro Coding Scale (observational data); FES = Family Environment Scale; FSS = Family Stress Scale; M = mother-report; F = father-report; T = teacher-report; Y = youth-report; IQ = WASI estimated full-scale IQ; SES = socioeconomic status measured by Hollingshead Four Factor Index; Multi = multivariate; Uni = univariate; [a] This variable was log transformed to correct for skewness; [b] This variable was square root transformed to correct for skewness. Significant results are in bold print. *$p < .05$, ** $p < .01$, ***$p < .001$, ^{ns} not significant.

It was hypothesized that compared to non-Latino Caucasian youth with SB, Latino youth with SB would demonstrate higher levels of family cohesion, lower levels of family conflict, and higher levels of family stress. Results partially supported this hypothesis. There were no significant differences in family cohesion or family stress between groups. However, results revealed that when controlling for IQ and SES, there was a significant difference in family conflict between groups F (2, 91) = 7.97, $p < .01$. Follow-up univariate analyses revealed a significant difference in observed family conflict, F (1, 99) = 16.44, $p < .001$. Specifically, compared to non–Latino Caucasian families (adjusted M = 1.96), Latino families (adjusted M = 1.81) were observed to demonstrate less family conflict. These results were also found when *only* controlling for SES.

Objective 3

The third objective was to identify the relationship between family functioning and psychosocial functioning in Latino and non-Latino Caucasian youth with SB.

Objective 3a. It was hypothesized that for all youth, greater family cohesion at Time 1 would predict lower levels of internalizing symptoms and externalizing symptoms, and higher levels of social competence, peer acceptance, and friendship quality at Time 2. Hypotheses were partially supported. Greater observed family cohesion predicted fewer teacher-reported internalizing symptoms (b = -6.38, SE = 2.96, β = -.24, t = -2.15, $p < .05$) and greater parent-reported social competence (b = 6.32, SE = 1.96, β = .30, t = 3.23, $p < .10$), and these results were also found when *not* controlling for SES and IQ. In addition, greater parent-reported family cohesion predicted greater friendship quality (b = .39, SE = .19, β = .22, t = 2.12, $p < .05$), and this was also found

when only controlling for SES and when only controlling for IQ. Contrary to hypotheses, greater parent-reported family cohesion predicted greater teacher-reported externalizing behavior (b = 5.04, SE = 2.28, β = .22, t = 2.21, $p < .05$), and these results were also found when *not* controlling for SES and IQ. Also contrary to hypotheses, no other main effects were found (p's > .05). Table 5 displays significant main effects.

Objective 3b. It was also hypothesized that for all youth, greater family conflict and greater family stress at Time 1 would predict higher levels of internalizing and externalizing symptoms, and lower levels of peer acceptance, social competence, and friendship quality at Time 2. Hypotheses were not supported, as there were no significant main effects of observed or parent-reported family conflict or family stress on psychosocial outcomes.

Objective 3c. It was hypothesized that the relation between family functioning and psychosocial functioning would vary as a function of ethnicity (see Figure 1). More specifically, it was expected that family functioning would be a greater predictor of psychosocial functioning for Latino youth with SB compared to non-Latino Caucasian youth with SB. Although results revealed significant moderation effects, hypotheses were only partially supported. Table 6 displays significant interaction effects. Specifically, results revealed a significant interaction between observed family cohesion and ethnicity when predicting peer acceptance (b = -.32, SE = .15, β = -.24.33, t = -2.16, $p < .05$), but only when controlling for SES.

Table 5. Main Effects of Family Functioning at Time 1 Predicting Youth Psychosocial Functioning at Time 2, Controlling for SES, IQ, and Adjustment at Time 1

Independent Variable	Internalizing Symptoms (T2)			Externalizing Symptoms (T2)			Social Competence (T2)			Friendship Quality (T2)		
	CBCL (T)			CBCL (T)			CBCL (M/F)			FAQ (Y)		
	β	*t*	Covariates	*β*	*t*	Covariates	*β*	*t*	Covariates	*β*	*t*	Covariates
Family Cohesion (T1)												
FIMS	–.24*	– 2.15	*SES & IQ*	–.10^{ns}	–.85	*SES & IQ*	.30**	3.23	*SES & IQ*	.20^{ns}	1.80	*SES & IQ*
	–.34**	– 3.08	*SES*	–.11^{ns}	–.96	*SES*	.32**	3.55	*SES*	.15^{ns}	1.42	*SES*
	–.24*	–2.15	*IQ*	–.03^{ns}	–.24	*IQ*	.32**	3.48	*IQ*	.17^{ns}	1.56	*IQ*
	–.30**	–2.96		–.09^{ns}	–.81		.32***	3.69		.11^{ns}	1.05	
FES (M/F)	–.08^{ns}	–.75	*SES & IQ*	.25*	2.54	*SES & IQ*	–.06^{ns}	–.58	*SES & IQ*	.22*	2.12	*SES & IQ*
	–.08^{ns}	–.75	*SES*	.22*	2.21	*SES*	–.06^{ns}	–.65	*SES*	.22*	2.12	*SES*
	–.08^{ns}	–.79	*IQ*	.24*	2.48	*IQ*	–.07^{ns}	–.79	*IQ*	.23*	2.20	*IQ*
	–.08^{ns}	–.76		.22*	2.23		–.06^{ns}	–.69		.20^{ns}	1.99	
Family Conflict (T1)												
FIMS	.18^{ns}	1.81	*SES & IQ*	.03^{ns}	.30	*SES & IQ*	–.06^{ns}	–.62	*SES & IQ*	–.14^{ns}	–1.28	*SES & IQ*
	.16^{ns}	1.45	*SES*	.02^{ns}	.19	*SES*	–.06^{ns}	–.60	*SES*	–.15^{ns}	–1.37	*SES*
	.14^{ns}	1.39	*IQ*	–.04^{ns}	–.34	*IQ*	–.09^{ns}	–.92	*IQ*	–.11^{ns}	–1.06	*IQ*
	.16^{ns}	1.47		–.01^{ns}	–.09		–.07^{ns}	–.76		–.09^{ns}	–.86	
FES (M/F)	.04^{ns}	.34	*SES & IQ*	–.15^{ns}	–1.45	*SES & IQ*	–.02^{ns}	–.22	*SES & IQ*	–.15^{ns}	–1.31	*SES & IQ*
	.04^{ns}	.35	*SES*	–.15^{ns}	–1.46	*SES*	.01^{ns}	.14	*SES*	–.16^{ns}	–1.50	*SES*
	.04^{ns}	.38	*IQ*	–.14^{ns}	–1.31	*IQ*	–.01^{ns}	–.13	*IQ*	–.15^{ns}	–1.38	*IQ*
	.04^{ns}	.36		–.15^{ns}	–1.44		.02^{ns}	.22		–.18^{ns}	–1.71	
Family Stress (T1)												
FSS (M/F)	.09^{ns}	.86	*SES & IQ*	–.04^{ns}	–.37	*SES & IQ*	.03^{ns}	.40	*SES & IQ*	–.18^{ns}	–1.77	*SES & IQ*
	.13^{ns}	1.25	*SES*	.03^{ns}	.27	*SES*	.03^{ns}	.35	*SES*	–.19^{ns}	–1.88	*SES*
	.11^{ns}	1.04	*IQ*	–.03^{ns}	–.31	*IQ*	.04^{ns}	.39	*IQ*	–.19^{ns}	–1.79	*IQ*
	.13^{ns}	1.24		.03^{ns}	.24		.04^{ns}	.48		–.20^{ns}	–1.94	

Note. All analyses controlled for adjustment at Time 1. Outcomes that were not significantly predicted are not included in the table.T1 = Time 1; T2 = Time 2; IQ = WASI estimated full-scale IQ; SES = socioeconomic status measured by Hollingshead Four Factor Index; FIMS = Family Interaction Macro Coding Scale (observational data); FES = Family Environment Scale; FSS = Family Stress Scale; M = mother-report; F = father-report; T = teacher-report; Y = youth-report; CBCL = Child Behavior Checklist; FAQ = Friendship Activity Questionnaire. Significant results are in bold print. *p < .05, ** p < .01, ***p <.001, ^{ns} not significant.

Table 6. Interaction Effects of Ethnicity and Family Functioning at Time 1 Predicting Youth Psychosocial Functioning at Time 2, Controlling for SES, IQ, and Functioning at Time 1

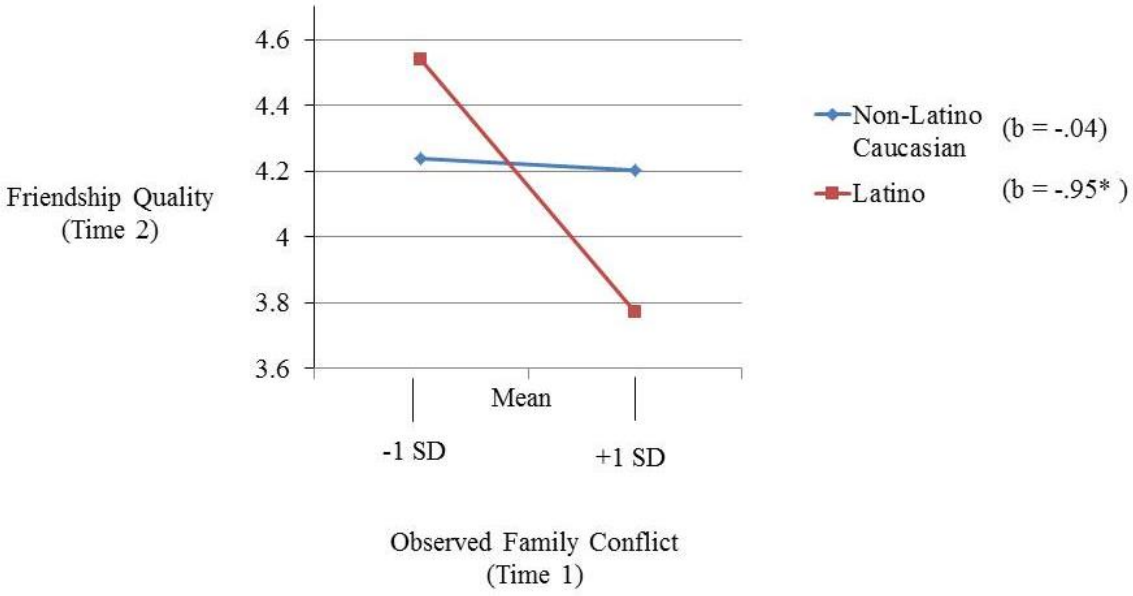
Independent Variable	Internalizing Symptoms (T2)						Social Competence (T2)			Peer Acceptance (T2)			Friendship Quality (T2)		
	CBCL (T)			CDI (Y)			CBCL (M/F)			HARTER (M/F/T/Y)			FAQ (Y)		
	β	*t*	Covariates	*β*	*t*	Covariates	*β*	*t*	Covariates	*β*	*t*	Covariates	*β*	*t*	Covariates
Family Cohesion (T1)															
FIMS	.19^{ns}	1.67	*SES & IQ*	–.08^{ns}	–.62	*SES & IQ*	.08^{ns}	.79	*SES & IQ*	–.15^{ns}	–1.44	*SES & IQ*	–.07^{ns}	–.55	*SES & IQ*
	.21^{ns}	1.65	*SES*	–.03^{ns}	–.21	*SES*	.07^{ns}	.60	*SES*	–.24*	– 2.16	*SES*	–.12^{ns}	–.92	*SES*
	.15^{ns}	1.27	*IQ*	–.10^{ns}	–.75	*IQ*	.08^{ns}	.76	*IQ*	–.12^{ns}	–1.15	*IQ*	–.05^{ns}	–.37	*IQ*
	.16^{ns}	1.27		–.04^{ns}	–.27		.07^{ns}	.65		–.17^{ns}	–1.55		–.07^{ns}	–.56	
FES (M/F)	.17^{ns}	1.42	*SES & IQ*	–.20^{ns}	–1.39	*SES & IQ*	–.05^{ns}	–.39	*SES & IQ*	–.03^{ns}	–.22	*SES & IQ*	.19^{ns}	1.47	*SES & IQ*
	.22^{ns}	1.72	*SES*	–.16^{ns}	–1.12	*SES*	–.07^{ns}	–.65	*SES*	–.01^{ns}	–.07	*SES*	.21^{ns}	1.64	*SES*
	.17^{ns}	1.39	*IQ*	–.20^{ns}	–1.41	*IQ*	–.04^{ns}	–.37	*IQ*	–.02^{ns}	–.19	*IQ*	.19^{ns}	1.48	*IQ*
	.22^{ns}	1.72		–.16^{ns}	–1.12		–.08^{ns}	–.69		–.00^{ns}	–.03		.21^{ns}	1.67	
Family Conflict (T1)															
FIMS	–.09^{ns}	–.81	*SES & IQ*	–.09^{ns}	–.67	*SES & IQ*	.19^{ns}	1.76	*SES & IQ*	–.04^{ns}	–.33	*SES & IQ*	–.26*	– 2.16	*SES & IQ*
	–.13^{ns}	–1.04	*SES*	–.08^{ns}	–.63	*SES*	.20^{ns}	1.89	*SES*	–.04^{ns}	–.39	*SES*	–.26*	– 2.16	*SES*
	–.07^{ns}	–.55	*IQ*	–.08^{ns}	–.59	*IQ*	.20^{ns}	1.89	*IQ*	–.06^{ns}	–.57	*IQ*	–.27*	– 2.28	*IQ*
	–.12^{ns}	–.94		–.08^{ns}	–.63		.20^{ns}	1.94		–.07^{ns}	–.63		–.28*	– 2.32	
FES (M/F)	–.03^{ns}	–.20	*SES & IQ*	.28^{ns}	1.99	*SES & IQ*	–.08^{ns}	–.72	*SES & IQ*	.01^{ns}	.08	*SES & IQ*	–.23^{ns}	–1.74	*SES & IQ*
	–.11^{ns}	–.88	*SES*	.27*	2.00	*SES*	–.05^{ns}	–.46	*SES*	–.00^{ns}	–.04	*SES*	–.24^{ns}	–1.93	*SES*
	–.05^{ns}	–.35	*IQ*	.28^{ns}	1.99	*IQ*	–.09^{ns}	–.75	*IQ*	.01^{ns}	.12	*IQ*	–.23^{ns}	–1.75	*IQ*
	–.11^{ns}	–.89		.27*	2.01		–.05^{ns}	–.44		–.01^{ns}	–.05		–.25^{ns}	–1.95	
Family Stress (T1)															
FSS (M/F)	–.17^{ns}	–1.28	*SES & IQ*	.16^{ns}	1.03	*SES & IQ*	.22^{ns}	1.84	*SES & IQ*	–.05^{ns}	–.43	*SES & IQ*	–.06^{ns}	–.45	*SES & IQ*
	–.27*	–2.01	*SES*	.15^{ns}	1.02	*SES*	.23*	2.03	*SES*	–.05^{ns}	–.43	*SES*	–.09^{ns}	–.62	*SES*
	–.19^{ns}	–1.39	*IQ*	.16^{ns}	1.04	*IQ*	.21^{ns}	1.76	*IQ*	–.05^{ns}	–.41	*IQ*	–.06^{ns}	–.44	*IQ*
	–.27*	–2.03		.15^{ns}	1.02		.23*	2.00		–.05^{ns}	–.43		–.09^{ns}	–.63	

Note. All analyses controlled for adjustment at Time 1 and main effects. Outcomes that were not significantly predicted are not included in the table. T1 = Time 1; T2 = Time 2; IQ = WASI estimated full-scale; SES = socioeconomic status measured by Hollingshead Four Factor Index; FIMS = Family Interaction Macro Coding Scale (observational data); FES = Family Environment Scale; FSS = Family Stress Scale; M = mother-report; F = father-report; T = teacher-report; Y = youth-report; CBCL = Child Behavior Checklist; CDI = Children's Depression Inventory; Harter = Harter Social Acceptance subscale. Significant results are in bold print. *$p < .05$, ** $p < .01$, ***$p < .001$, ^{ns} not significant.

Post-hoc simple slope regression analyses revealed that greater observed family cohesion predicted greater peer acceptance for non-Latino Caucasian youth (b = .25, SE = .10, β = .31, t = -2.60, p < .05), but the effect was not significant for Latino youth (b = -.08, SE = .12, β = -.10, t = -.64, p = .52).

Further, there was a significant interaction between observed family conflict and ethnicity when predicting friendship quality (b = .91, SE = .42, β = -.26, t = 2.16, p < .05), and these results were also found when *not* controlling for SES and IQ. Post-hoc simple slope regression analyses revealed greater observed family conflict predicted less friendship quality for Latino youth (b = -.95, SE = .39, β = -.70, t = -2.46, p < .05), but the effect was not significant for non-Latino Caucasian youth (b = -.04, SE = .17, β = -.03, t = -.25, p = .81; see Figure 4).

Figure 4. Post-hoc Probe of Significant Interaction between Family Conflict and Ethnicity Predicting Friendship Quality



Note. Analysis controlled for SES, IQ, and friendship quality at Time 1. *p < .05

There was also a significant interaction between parent-reported family conflict and ethnicity when predicting youth-reported internalizing symptoms when only controlling for SES (b = .11, SE = .05, β = .27, t = 2.00, p < .05) and when not including covariates. Post-hoc simple slope regression analyses revealed greater parent-reported family conflict predicted fewer child-reported internalizing symptoms for non-Latino Caucasian youth (b = -.05, SE = .02, β = -.27, t = -2.15, p < .05), but the effect was not significant for Latino youth (b = .06, SE = .05, β = .33, t = 1.20, p = .23).

There was also a significant interaction between parent-reported family stress and ethnicity when predicting teacher-reported internalizing symptoms when only controlling for SES (b = -25.74, SE = 12.81, β = -.27, t = -2.01, p < .05) and when *not* including covariates. Post-hoc simple slope regression analyses revealed greater parent-reported family stress predicted greater teacher-reported internalizing symptoms for non-Latino Caucasian youth (b = 16.42, SE = 7.31, β = .29, t = 2.25, p < .05), but the effect was not significant for Latino youth (b = -9.32, SE = 10.53, β = -.17, t = -.89, p = .31).

Lastly, there was also a significant interaction between parent-reported family stress and ethnicity when predicting parent-reported social competence when only controlling for SES (b = 18.68, SE = 9.20, β = .23, t = 2.03, p < .05) and when not including covariates. Post-hoc simple slope regression analyses revealed no significant moderation effects for either Latino youth (b = 14.45, SE = 7.66, β = .31, t = 1.89, p = .06) or non-Latino Caucasian youth (b = -4.24, SE = 5.25, β = -.09, t = -.81, p = .42).

Objective 4

The fourth objective was to examine the longitudinal relationship between acculturation, family functioning, and psychosocial functioning in Latino youth with SB (see Figures 2 and 3).

Table 7 displays means and correlations among acculturation and enculturation variables at Time 1 for the Latino sample. Table 8 displays correlations among acculturation, enculturation, and psychosocial adjustment variables at Time 1 for the Latino Sample. Table 9 displays correlations among acculturation, enculturation, and family functioning variables at Time 1 for the Latino Sample. Due to missing data at Time 2 (*n's* < 27 for outcome variables), the sample size was under-powered to detect large effect sizes for all analyses.

Objective 4a. It was hypothesized that higher levels of both youth and mother acculturation at Time 1 would predict less adaptive family functioning and poorer psychosocial functioning at Time 2. Results were partially supported, in that greater youth acculturation predicted greater parent-reported externalizing symptoms (b = 7.43, SE = 2.21, β = .46, t = 3.36, p < .01). In addition, greater mother acculturation predicted greater teacher-reported youth externalizing symptoms (b = .28, SE = 1.24, β = .47, t = 2.25, p < .05) and lower parent-reported family cohesion (b = -.15, SE = .06, β = -.45, t = -2.51, p < .05; see Table 7). No other significant results were found.

Table 7. Means and Correlations among Acculturation/Enculturation Variables at Time 1 for Latino Sample

Variable	*M*(SD)	Actual Range	1.	2.	3.	4.
Acculturation						
1. Youth	4.22(.57)	2.83 – 5.00	–	.07	.25	.12
2. Mother	2.71(1.05)	1.33 – 4.83		–	–.34	–.37*
Enculturation						
3. Youth	3.10(1.13)	1.00 – 5.00			–	.27
4. Mother	4.18(.92)	2.00 – 5.00				–

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

Objective 4b. It was also hypothesized that higher levels of both youth and mother enculturation at Time 1 would predict more adaptive family functioning and better psychosocial functioning at Time 2. Again, results were partially supported, in that greater mother enculturation predicted less parent-reported family conflict (b = -.16, SE = .06, β = -.42, t = -2.57, $p < .05$; see Table 7). No other significant results were found.

Exploratory Analyses. Exploratory analyses tested longitudinal mediation effects of the significant findings above. First, it was examined whether family functioning at Time 1 mediates the relationship between acculturation at Time 1 and psychosocial functioning at Time 2. Because results from Objective 4 revealed that mother acculturation at Time 1 significantly predicted parent-reported family cohesion at Time 2, these two variables were included in mediation models predicting each psychosocial functioning outcome at Time 2. Results indicated no significant mediation effects (p's > .05), suggesting that parent-reported family cohesion at Time 1 does not mediate the relationship between mother acculturation at Time 1 and youth psychosocial functioning at Time 2.

Table 8. Correlations among Acculturation/Enculturation and Psychosocial Functioning Variables at Time 1 for Latino Sample

Variable	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.
Acculturation											
Youth	.01	–.06	–.07	–.08	–.31	–.14	–.08	.50**	.03	–.07	.13
Mother	–.30	.17	.32	–.34	–.20	.14	.32	.27	.11	.21	–.28
Enculturation											
Youth	.38	.06	.23	.07	.06	.30	–.36	–.07	–.08	.01	.30
Mother	.16	–.02	–.07	.52**	–.09	–.02	–.45*	–.23	–.26	–.09	–.06
Internalizing											
1. CBCL (M)	–	.64**	.25	.47*	.60**	.24	–.57**	–.18	–.38*	–.24	.38
2. CBCL (F)		–	.35	.25	.68**	.11	–.28	–.26	–.27	–.28	–.00
3. CBCL (T)			–	.29	–.00	.61**	–.23	–.20	–.61**	–.36	–.25
4. CDI (Y) [a]				–	.28	.34	–.53**	–.24	–.38*	–.35	–.23
Externalizing											
5. CBCL (M/F)					–	.13	–.07	–.12	–.03	–.21	.31
6. CBCL (T)						–	–.09	–.07	–.35	–.33	–.07
Social Competence											
7. CBCL (M/F)							–	.38*	.42*	.12	.17
8. CSPI (Y)								–	.32	.24	.31
Peer Acceptance											
9. Harter (M/F/T/Y)									–	.31	.11
Friendship Quality											
10. FAQ (Y)										–	.30
11. ESQ (Y)											–

Note. CBCL = Child Behavior Checklist; CDI = Children's Depression Inventory; CSPI = Children's Self-Efficacy for Peer Interaction Scale; Harter = Harter Social Acceptance subscale; FAQ = Friendship Activity Questionnaire; ESQ = Emotional Support Questionnaire; FIMS = Family Interaction Macro Coding Scale (observational data); FES = Family Environment Scale; FSS = Family Stress Scale; M = mother-report; F = father-report; T = teacher-report; Y = youth-report. [a]This variable was log transformed to correct for skewness. *$p < .05$, ** $p < .01$, ***$p < .001$.

Table 9. Correlations among Acculturation/Enculturation and Family Functioning Variables at Time 1 for Latino Sample

Variable	1.	2.	3.	4.	5.
Acculturation					
Youth	–.08	.17	–.37*	.17	–.06
Mother	.07	.25	–.16	–.21	–.30
Enculturation					
Youth	–.28	-.07	.23	.17	–.05
Mother	–.33	-.07	–.17	–.00	–.14
Family Cohesion					
1. FIMS	–	.03	.07	–.20	–.14
2. FES (M/F)		–	–.09	–.62***	–.26
Family Conflict					
3. FIMS			–	–.04	.11
4. FES (M/F)				–	.57***
Family Stress					
5. FSS (M/F) [a]					–

Note. FIMS = Family Interaction Macro Coding Scale (observational data); FES = Family Environment Scale; FSS = Family Stress Scale; M = mother-report; F = father-report. [a]This variable was square root transformed to correct for skewness. *p < .05, ** p < .01, ***p <.001.

In addition, previous results revealed that mother enculturation at Time 1 significantly predicted parent-reported family conflict at Time 2, thus, these two variables were included in mediation models predicting each psychosocial functioning outcome at Time 2. Results indicated no significant mediation effects (*p's* > .05), suggesting that parent-reported family conflict at Time 1 does not mediate the relationship between mother enculturation at Time 1 and youth psychosocial functioning at Time 2.

Second, it was examined whether acculturation mediates the relationship between family functioning at Time 1 and psychosocial functioning at Time 2. Because results

from Objective 4 revealed that youth acculturation at Time 1 significantly predicted parent-reported externalizing symptoms at Time 2, each family functioning variable at Time 1 was tested to predict parent-reported externalizing symptoms at Time 2, as mediated by youth acculturation at Time 1. Results indicated no significant mediation effects (*p's* > .05). In addition, because previous results revealed that mother acculturation at Time 1 significantly predicted teacher-reported externalizing symptoms at Time 2, each family functioning variable at Time 1 was tested to predict teacher-reported externalizing symptom at Time 2, as mediated by mother acculturation at Time 1. Results indicated no significant mediation effects (*p's* > .05).

Table 10. Main Effects of Youth/Mother Acculturation/Enculturation at Time 1 as Predictors of Family Functioning and Youth Psychosocial Functioning at Time 2

Independent Variable	Externalizing Symptoms (T2)				Family Cohesion (T2)		Family Conflict (T2)	
	CBCL (P)		CBCL (T)		FES (M/F)		FES (M/F)	
	β	*t*	*β*	*t*	*β*	*t*	*β*	*t*
Acculturation (T1)								
Youth	.46**	3.36	.18^{ns}	.76	.10^{ns}	.44	.12^{ns}	.65
Mother	.17^{ns}	1.12	.47*	2.25	–.45*	–2.51	.23^{ns}	1.25
Enculturation (T1)								
Youth	.07^{ns}	.42	–.42^{ns}	–1.86	.20^{ns}	.96	–.22^{ns}	–1.19
Mother	.01^{ns}	.08	–.22^{ns}	–.94	.22^{ns}	1.16	–.42*	–2.57

Note. All analyses controlled for either family functioning or psychosocial functioning at Time 1. Outcomes that were not significantly predicted are not included in the table. T1 = Time 1; T2 = Time 2; CBCL = Child Behavior Checklist; FES = Family Environment Scale; M = mother-report; F = father-report; T = teacher-report. Significant results are in bold print. *p < .05, ** p < .01, ***p <.001, ^{ns} not significant.

CHAPTER FIVE

DISCUSSION

Past research has examined psychosocial functioning in youth with spina bifida (SB), and indicates that these youth have poorer psychosocial outcomes compared to typically-developing (TD) youth (e.g., Holmbeck et al., 2010). However, this research has been conducted primarily on non-Latino Caucasian youth with SB, so it is unclear the extent to which these findings can be generalized to Latino youth with SB. Understanding more about Latino youth with SB, in particular, is important for multiple reasons. First, prevalence rates of SB are the highest for Latinos/Hispanics compared to all other ethnic or racial groups (Berry et al., 2010; CDC, 2009; William et al., 2005), and Latino/Hispanics are the country's second largest racial/ethnic group with Latino youth comprising 23% of all U.S. youth ages 17 and younger (U.S. Census Bureau, 2013). Second, TD Latino youth are at a greater risk for poorer psychosocial outcomes compared to non-Latino Caucasian youth (e.g., CDC, 2006), due to stressors related to poverty, discrimination, and acculturation (Romero & Roberts, 2003). This suggests that Latino youth with SB may be at the greatest risk for poor psychosocial outcomes among youth with SB. Further, family functioning may be an important predictor of psychosocial functioning in youth with SB (e.g., Holmbeck & Devine, 2010). Examining this link within in Latino families of youth with SB may be particularly important given the strong emphasis on family in the Latino culture (Cauce & Domenech-Rodriguez

2002). Because psychosocial functioning and family functioning may be influenced by levels of acculturation in Latino families (Cabassa, 2003), examining the impact of acculturation within Latino families of youth with SB was also a goal of this study. Thus, the current study sought to address limitations in the current literature by examining psychosocial functioning, family functioning, and influences of acculturation among Latino youth with SB.

Compared to non-Latino Caucasian youth with SB, results of the current study suggested that Latino youth with SB exhibited less externalizing symptoms, less social competence, and less family conflict. Also, ethnicity (non-Caucasian Latino versus Latino) moderated the relationship between family functioning and psychosocial functioning in several ways. Notably, for Latino youth only, greater observed family conflict predicted lower friendship quality over time. Although several significant differences between non-Latino Caucasian and Latino youth with SB were revealed, these results indicated that there were many domains in which these groups did not differ significantly. In addition, only among the Latino youth with SB, over time, greater mother and youth acculturation to the U.S. predicted greater externalizing symptoms, greater mother acculturation predicted lower family cohesion, and greater mother enculturation to her country of origin predicted lower family conflict. However, family functioning did not significantly mediate the relationship between acculturation and psychosocial functioning. The majority of findings of the present study were found when controlling for SES and youth IQ, although results varied based on which covariates were included. In addition, some results were found for one reporter or methodology, but not

the other (e.g., teacher- versus parent-report, or questionnaire data versus observational data).

Psychosocial Functioning

The first objective of this was study was to characterize psychosocial functioning in Latino youth with SB by comparing psychological adjustment (internalizing symptoms, externalizing symptoms) and social adjustment (social competence, peer acceptance, friendship quality) outcomes with those of non-Caucasian Latino youth. Latino youth and non-Caucasian Latino youth were found to demonstrate similar levels of internalizing symptoms, peer acceptance, and friendship quality. Yet, there were differences between groups on teacher-reported externalizing symptoms and parent-reported social competence. However, contrary to the hypothesis, Latino youth demonstrated less, not more, teacher-reported externalizing symptoms. Studies of how rates of externalizing problems in youth with SB compare to rates in TD youth have yielded mixed findings, although research on TD Latino youth has documented that they are at a significantly greater risk for problem behaviors such as fighting, drug use, and delinquency (CDC, 2006). It may be that the differences in problematic behaviors seen in TD Latino and non-Latino Caucasian youth are not as prominent in the SB population due to possible cognitive or medical limitations. For example, research on health risk behaviors in this population have found that youth with SB lag behind their TD peers in some health risk behaviors, such as cigarette smoking, and they engage in other more problematic behaviors to a lesser degree (Murray et al., 2014).

Regarding social competence, results were consistent with the hypothesis in that Latino youth demonstrated less parent-reported social competence. Interestingly, these results were found when controlling for IQ, but not SES. This indicates that the difference between groups is likely driven by the difference in SES, and not so much by ethnicity per se. The measure of social competence used in this study, the CBCL Social Competence subscale, includes items regarding participation in organizations, amount of time spent with friends outside school hours, number of close friends, and behavior with others (Achenbach & Rescorla, 2001). Participation in organizations can be limited due to lower SES because of the possible costs associated with youth organizations (Gardner, Roth, & Brooks-Gunn, 2009). Also, time spent with friends outside of school may be limited as parents of lower SES may be less flexible with their time to help arrange such engagements (American Psychological Association, 2014).

Family Functioning

The second objective of this study was to characterize family functioning in Latino youth with SB by comparing outcomes (family cohesion, family conflict, family stress) with non-Latino Caucasian youth. Contrary to hypotheses, no differences were found for family cohesion or family stress. It was expected that Latino families would demonstrate greater family cohesion given that previous research has identified familism as a more salient cultural value for Latino families compared to non-Latinos (e.g., Cauce & Domenech-Rodriguez, 2002). However, previous studies have found family cohesion and familism to be distinct constructs (Marsiglia et al., 2009). Also, Latinos are a heterogeneous group, so individual Latino families may vary in their endorsement of

particular cultural values, such as the emphasis on family solidarity (Lopez et al., 2012). In addition, it was expected that Latino families would demonstrate greater family stress given that they are more likely to experience stress related to poverty and discrimination (Romero & Roberts, 2003). It may be that additional stress found in Latino families impact parents, but not family units. Or, it may that the amount of family stress is similar in both Latino and non-Latino Caucasian families, because both groups are experiencing similar stresses that result from having a child with a chronic health condition (Wallander & Varni, 1998). Lastly, the lack of significant differences may be due to "floor effects," in that it may be difficult to statistically detect differences between groups when both Latino and non-Latino Caucasian families reported low levels of family stress (see means in Table 4).

Consistent with the hypothesis, Latino families were observed to demonstrate less family conflict during interaction tasks. This result may truly reflect an ethnic/cultural difference between the groups, in that research on TD Latino families has found that family conflict is diminished by the presence of family support and closeness typically found in Latino families (e.g., Lorenzo-Blanco et al., 2012). Interestingly, the difference in family conflict was only found for observational data of family interactions tasks, and not for parent-reported data. It may be that non-Latino Caucasian parents are under-reporting the amount of conflict that may be present within their families. Or, it is possible that Latino families were less likely to engage in family conflict while being observed within a research context. Very few studies on Latino families have included observational data of family interaction tasks (Domenech Rodriquez, Donovick, &

Crowley, 2009). Thus, more research is needed to determine if a cultural difference in reactivity to observation exists.

The Relationship between Family Functioning and Psychosocial Functioning

The third objective of this study was to identify whether family functioning at Time 1 predicted psychosocial functioning at Time 2 in all youth with SB, and then to identify whether that relationship differed between Latino and non-Latino Caucasian youth. For all youth with SB, greater observed family cohesion predicted fewer teacher-reported internalizing symptoms and greater parent-reported social competence. Also, greater parent-reported family cohesion predicted greater friendship quality. Previous research on family functioning as a predictor of psychosocial outcomes is sparse, but has indicated positive family experiences and family satisfaction may protect against internalizing symptoms (Bellin et al., 2010; Essner & Holmbeck, 2010). The current study builds upon the existing body of literature by highlighting the positive impact of family cohesion for youth with SB for both psychological and social adjustment. However, in light of these findings, it is interesting that greater parent-reported family cohesion also predicted greater teacher-reported externalizing symptoms. Although youth with SB have been observed during family interaction tasks to display more passive, dependent behavior (Holmbeck, Coakley, et al., 2002), it may be that greater family cohesion fosters a more active, less passive youth interaction style, which, in turn, is observed by teachers in the classroom as externalizing behavior. Furthermore, family conflict and family stress did not significantly predict any psychosocial outcomes. This

indicates that for youth with SB, positive family functioning has more predictive utility than negative family functioning when predicting later outcomes.

When examining whether ethnicity moderates the relationship between family functioning and psychosocial functioning, several significant interactions emerged. For Latino youth, greater observed family conflict predicted less friendship quality. This finding may be explained by the "spill over" effect found in previous research on TD youth, which has documented that family conflict can lead to increased conflict within peer relationships (Chung & Fuligni, 2011). Also, given the cultural emphasis on compliance and family harmony in Latino families, family conflict may be more disruptive for Latino youth, and hinder their ability engage in their friendships (Chung, Flook, & Fuligni, 2009).

Results also revealed that for non-Latino Caucasian youth, greater observed family cohesion predicted greater peer acceptance, and greater parent-reported family stress predicted greater teacher-reported internalizing symptoms. Both of these findings are in the expected direction; however, it was expected that these relationships would be stronger for Latino youth. Interestingly, these findings were only found when controlling for SES, and not when controlling for IQ. This indicates that youth IQ has an impact on the relationship between domains of family functioning and psychosocial functioning, specifically for non-Latino Caucasian youth. Previous research has found a robust relationship between verbal IQ and family cohesion in a predominantly Caucasian sample of youth with SB (Holmbeck, Coakley, et al., 2002). These researchers suggested that interaction and communication in families of youth with lower IQ's may be reduced, thus

impacting domains such as family cohesion. Future research should examine how IQ may mediate the significant relationships found in the present study.

In addition, moderation analyses also revealed that greater parent-reported family conflict predicted fewer child-reported internalizing symptoms for non-Latino Caucasian youth, but only when analyses did not include SES and IQ as covariates. This finding is in contrast to the hypothesis that greater family conflict would predict worse psychosocial functioning, such as more internalizing symptoms. It may be that for non-Latino Caucasian youth, family conflict is an indication of engagement or interaction with family members. Indeed, it has been suggested that engaging in conflict may be a way that parents and adolescents address deep underlying issues (Arnett, 2009; Juang, Syed, & Cookston, 2012). Greater family conflict at Time 1 may indicate that family members are addressing certain issues, which may be resolved two years later at Time 2. If so, this type of family interaction could lead to fewer internalizing symptoms.

In addition, family conflict may elicit youth to utilize coping strategies that are not captured in the present study. If these coping strategies are adaptive, they may attenuate the otherwise negative impact of family conflict over time (Santiago & Wadsworth, 2009).

The Impact of Acculturation for Latino Youth

The fourth objective of the current study was to examine the Latino sample specifically and identify if youth and mother acculturation and enculturation predicted youth psychosocial functioning and family functioning. It was also examined whether family functioning mediated the relationship between acculturation/enculturation and

psychosocial outcomes. Although these analyses were underpowered due to missing data in the Latino sample, significant findings still emerged.

Through examining youth and mother acculturation to the U.S., significant findings were consistent with hypotheses. It was found that youth acculturation predicted greater parent-reported externalizing symptoms. Also, mother acculturation predicted greater teacher-reported externalizing symptoms and lower parent-reported family cohesion. In other words, the more that youth and their mothers acquire cultural elements of the U.S., the more externalizing behaviors youth exhibit, and the less cohesive families are. This is consistent with previous research based on the Immigrant Paradox, which suggests that greater acculturation to the U.S. leads to poor psychosocial functioning and a deterioration of family functioning (e.g., Schwartz et al., 2010; Gonzales et al., 2006). These findings suggest that Latino youth with SB are similar to TD Latino youth in this way, and that the presence of SB does not negate the negative impact of acculturating to the U.S.

Also consistent with hypotheses was that greater mother enculturation predicted less parent-reported family conflict. This suggests that the more mothers retain their heritage-culture, the less family conflict occurs. This is consistent with previous research that has found Latino values to place a greater emphasis on positive family functioning. Thus, the more mothers are able to retain their cultural emphasis on the importance of family, the less conflict occurs within the family.

While there is a lack of research on how family functioning may mediate the relationship between *enculturation* and psychosocial functioning, previous research has

found that the impact of *acculturation* on psychosocial functioning is mediated by family functioning. Specifically, it has been found that greater acculturation leads to poorer family functioning which, in turn, leads to poorer psychosocial functioning (Gonzales et al., 2006; Lorenzo-Blanco et al., 2012; Martinez et al., 2011). However, the current study did not find significant results for either the acculturation or enculturation models. The lack of findings may be due to the lack of power in analyses. It may also be that acculturation and enculturation have a direct impact on youth psychosocial functioning that is not dependent on how family functioning is impacted by acculturation and enculturation.

These findings also lend support to the conceptualization of acculturation as a multidimensional construct (Benet-Martínez & Haritatos, 2005). As our findings have revealed, distinguishing between acculturation and enculturation allows for the identification of effects that are unique to each of these processes. Further, examining mother and youth levels of acculturation and enculturation proved to be important, as these had differential relations with the outcomes, which was similar to what previous research has found (e.g., Smokowski, Buchanan, et al., 2009).

Strengths, Limitations, and Future Research

This study had several strengths. First, the current study expanded the limited knowledge on Latino youth with SB by examining psychosocial, familial, and acculturation factors. Second, the current study used multiple methods and reporters, which has been encouraged within research in general, and the field of SB research specifically (Holmbeck et al., 2006). Indeed, results from the current study varied

depending on methodology (i.e., observational data versus questionnaire data) as well as by reporter (i.e., parent- versus teacher- versus youth-report). Third, longitudinal data was used to examine relationships over time, which allows for consideration of developmental changes in childhood and adolescence (Kelly et al., 2008). Fifth, the current study examined moderators (i.e., ethnicity) as well as mediators (i.e., family functioning, acculturation), in order to examine the mechanisms for why relationships among constructs may exist.

However, there are several limitations of the current study that should be addressed in future work. First, the Latino sample size was relatively small. Although statistical power was adequate to examine differences between the non-Latino Caucasian and Latino groups, there was a significant amount of missing data, particularly at Time 2, when examining acculturation within the Latino group only. The field has cited difficulty in recruitment and retention of ethnic minority populations (Kao et al., 2011; Skaff, Chesla, & de los Santos, 2002; Yancey, Ortega, & Kumanyika, 2006). Still, future research should increase efforts for Latino family recruitment and retention. Second, this study did not include father-reports of self or youth acculturation and enculturation. Because fathers may offer unique perspectives on their and their children's levels of acculturation and enculturation, it is recommended that future research include father data. Third, there are limitations to the current study's measure of acculturation. Although the current study was consistent with recommendations to assess levels of acculturation and enculturation separately (Benet-Martínez & Haritatos, 2005), and to examine parent and child levels of each (e.g., Smokowski, Buchanan, et al., 2009), the

measure may be limited in how it captures "culture." The measure includes items regarding language preference for thinking, speaking, writing, watching television, as well as time spent with individuals of the dominant culture. It has been recommended that measures of acculturation capture cultural practices (e.g., language use, media preferences, social affiliations, cultural customs and traditions), cultural values (e.g., belief systems associated with a specific context or group), and cultural identifications (e.g., attachments to cultural groups, positive esteem drawn from these attachments; Schwartz et al., 2010). Fourth, the current study highlighted the relevance of the familism construct to Latino families, but did not include a direct measure of familism. Future studies on Latino families of youth with SB should include such culturally-relevant measures. Fifth, although analyses of the current study assume the Latino group to be homogeneous, it is recognized that wide differences exist among individuals within the group in terms of country of origin and cultural practices. More than half of the Latino group was Mexican-American, consistent with population trends, so results may be more representative of that group. Finally, the current study did not examine how differences between groups and constructs may vary by age. Because a wide range of ages was included in the current study (i.e., ages 8-15 at Time 1, ages 10-17 at Time 2), future research should examine how the relationships examined in this study may vary depending on the developmental stages of the youth.

Conclusions and Clinical Implications

The results of the current study have important implications for culturally-sensitive clinical work with youth with SB. First, it appears that, despite the greater

number of challenges and stressors that are believed to be more prevalent for Latino youth (e.g., Potochnick & Perreira 2010), Latino youth with SB tend to fare similarly to their non-Latino Caucasian counterparts. In fact, results from the current study suggest that there may be ways in which Latino youth with SB may have better outcomes compared to Non-Latino Caucasians, such as experiencing fewer externalizing symptoms. It would be beneficial for clinicians working with Latino youth to identify these areas of resilience and unique strengths and build upon them to promote better functioning. Further, although Latino families of youth with SB tend to demonstrate less family conflict compared to non-Latino Caucasian families, the family conflict that Latino families do demonstrate leads to decreased friendship quality, which suggests that it is important to assess and address family conflict when working with these families. Lastly, findings from the present study emphasize the importance of considering acculturation when working with Latino families of youth with SB. Clinicians may assume that families that are more acculturated will be better off, as is the assumption about many immigrants to the U.S. (Schwartz et al., 2010). However, this study, along with considerable previous research, suggests that the opposite may be true. Therefore, it is important for clinicians to assess for acculturation factors when working with Latino families of youth with SB, and understanding how the acculturation and enculturation of both parents and child have implications for family and intrapersonal functioning.

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VITA

Jaclyn Lennon is a doctoral student at Loyola University Chicago studying clinical psychology with a specialty in child, adolescent, and family issues. She received her B.S. in Psychology and Human Services from Loyola University Chicago in 2010, graduating summa cum laude. During her time as an undergraduate at Loyola, she received the Damen Scholarship for Academic Achievement and the Presidential Scholarship for Academic Achievement. She also conducted research under the guidance of Dr. Grayson Holmbeck. After graduating, Jaclyn worked as the project coordinator for a developmental psychology research lab at Loyola, studying self-regulation and school readiness among low-income ethnic-minority children. Through her work on these projects, she presented research at multiple regional and national conferences, and co-authored several peer-reviewed journal articles and book chapters. Since starting graduate school at Loyola, Jaclyn has been a member of Dr. Grayson Holmbeck's research lab, studying families of youth with spina bifida. As part of this lab, she has worked on multiple projects highlighting her different interests. These include projects examining the impact of neuropsychological functioning and social competence on internalizing symptoms in youth with spina bifida, identifying areas of resilience and disruption in families of youth with spina bifida and families of typically-developing youth, and identifying the impact of income and socioeconomic status on psychosocial and family

outcomes in families of youth with spina bifida. Jaclyn's master's thesis examined the relation between psychosocial functioning, family functioning, and acculturation among Latino youth with spina bifida. Work on these various projects has resulted in numerous presentations, peer-reviewed journal articles, and book chapters.