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Family Structure, Transitions and Psychiatric Disorders Among Puerto Rican Children

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Abstract

This paper examines whether family structure and its transitions are associated with internalizing and externalizing psychiatric disorders among Puerto Rican-origin children. It uses longitudinal data (three waves) from the Boricua Youth Study, which includes probability samples of children in the South Bronx (New York) and San Juan (Puerto Rico) ($n = 2,142$). We also examine factors which may explain how family structure and transitions may be related to child psychiatric disorders. Our results show that for both internalizing and externalizing disorders there were no significant differences between children of cohabiting (biological or step) parents or of single parents compared to children of married biological parents. In Puerto Rico only, transitioning once from a two-parent family to a single-parent family was related to child internalizing disorders. Family transitions were not associated with externalizing disorders at either site. Context may be an important factor shaping the risk that family dissolution is followed by an internalizing disorder among children.

Keywords

Cohabitation; Externalizing disorders; Family structure; Family transitions; Internalizing disorders

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Conflict of Interest The authors declare that they have no conflict of interest.

Compliance with Ethical Standards

Ethics The results presented in this manuscript are original. All coauthors have substantially contributed to the research, have approved the manuscript and agreed to the by-line order. We confirm that none of the results have been published elsewhere and are not under consideration by another journal with the exception of an abstract (preliminary results) presented on the American Academy of Child and Adolescent Psychiatry Meeting, October 2013. We have complied with APA ethical standards in the treatment of all assessment participants, and the study was approved by the Institutional Review Board of the New York State Psychiatric Institute and the University of Puerto Rico Medical School. All participants provided informed consent to participate in the study and assent forms for younger children.

Ethical Approval All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional and/or national research committee and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards.

Introduction

Changes in family structure can be important in influencing a child's life. In the past few decades, family arrangements in the United States (US) have changed dramatically. Early studies on the topic mostly included only two types of families: two-parent and single-parent families. The "single-parent" category of these early studies included non-differentiated family structures (e.g. single parents and also cohabiting parents who never married) without taking into account the nature of relationships of the adults in the household (Manning and Lichter 1996). More recently, single parents sharing their lives with a romantic partner have been categorized as category as cohabiting parents. Despite the decrease in marriages and the increase in divorces, nationally, the rate of single motherhood has remained constant at 9 % since 1992 (Vespa et al. 2013). Lately, it has been estimated that cohabitation is the family structure of 18 % of the U.S. population (Kennedy and Bumpass 2008). Therefore, non-married family structures may be playing an increasingly important role in the lives of Americans.

There are complexities involved in studying family structure and its impact on child development, specifically, on the development of psychiatric disorders by children, which can be manifested either as emotional suffering (internalizing problems) or problematic overt behaviors (externalizing problems). Attempts to study how different family arrangements may impact children have been made. Cohabiting-unmarried parents sharing residence with children-, to the extent that it may imply a more tenuous relationship than marriage, may represent a higher risk for child development when compared to married parents (Manning and Lamb 2003). Important implications of family structure on child development can be missed if the presence of a non-biological relationship (step-parents, as opposed to biological parents) with certain parental figures not taken into account (Bachman et al. 2012; Manning and Brown 2006). Although some studies have described that children from single-parent families and cohabiting families may fare worse compared to those from a married family (Fomby and Estacion 2011; Manning and Lamb 2003; Musick and Meier 2010); there is also evidence that children living in a biological married-parent family fare better than those living in a married step-parent family (Coleman et al. 2000). In a study taking cohabitation into account within step-parent families, children in cohabiting step-parent families had higher levels of behavior problems than those in married step-parent families (Coleman et al. 2000). Considering these results without a context can lead to simplistic and deluded conclusions as family dynamics are complex and child problems may be the result of multiple family factors. Overall, these results indicate that the number and/or type of biological relationship with the child and the legal living arrangement of the adults sharing childrearing could have been related to child development.

However, relying on an indicator or family structure at a single point in time to draw conclusions about child development and well-being has considerable limitations. Family structure is not static. For instance, when studying a step-parent family, there are a number of ways the step-parent family may have been formed; it could be that a single-parent started a relationship, or a married couple divorced and one of the parental figures starts a new relationship. Thus, to capture the dynamic nature of family structures, it is important to also

consider family transitions as they may be very relevant for understanding child outcomes (Brown 2006; Fomby and Cherlin 2007; Schroeder et al. 2010).

With the changes in American families in previous decades, family transitions have become more frequent. For example, 20 % of the marriages dissolve after 5 years (Cherlin 2010). Also, 54 % of women who divorce will remarry within 5 years, and after the second marriage, union dissolutions are even more frequent. Of these women who experience union dissolution after the second marriage, 67 % of single mothers start cohabitating with another partner and 50 % of them marry afterwards (Bramlett and Moshner 2002; Kennedy and Bumpass 2008). Moreover, cohabiting couples have one of the most unstable family structures (Bumpass and Lu 2000). The probability of union dissolution in cohabiting couples is almost twice as high as that of married couples, with 39 % of those relationships dissolving within 3 years (Tienda and Mitchell 2006). Thus, children in cohabiting families are more likely to experience family transitions (Landale et al. 2011; Raley and Wildsmith 2004). Furthermore, as cohabitation is more frequent among low-income families, it is estimated that 10 % of low-income children may have experienced three or more transitions by the age of eight (Bachman et al. 2011; Federal Interagency Forum on Child and Family Statistics 2013).

The instability hypothesis states that family transitions are stressful and detrimental, especially for children (Hill et al. 2001). It has been suggested that each transition worsens child outcomes, possibly increasing the odds of internalizing or externalizing problems (Amato 2003; Bachman et al. 2011, 2012; Brown 2006; Cavanagh and Fomby 2012; Cavanagh and Huston 2008; Fomby and Cherlin 2007; Osborne and McLanahan 2007; Wu and Thomson 2001). Studies have shown that children living with a single-parent all their lives and a stable two-parent family had better outcomes (including school performance) than those who underwent family transitions. Further suggesting the relevance of understanding family transitions, children from stable single-parent households did not fare worse than their counterparts living in a stable two-parent family (Cherlin 2009; Najman et al. 1997; Yang and Kramer 2012).

Despite evidence supporting the instability hypothesis, a few studies have shown mixed results. For example, transitioning from a single-parent family to a two-parent family or transitioning out of a step-parent family was not associated with negative child outcomes (Brown 2010; Waldfogel et al. 2010). Furthermore, child outcomes were no worse when children underwent multiple family transitions compared with outcomes among those children who experienced fewer or just one transition (Carlson and Corcoran 2001; Kurdek et al. 1994; Sun and Li 2008). Those who examined the timing of the transition (how recently the transition happened) concluded that only recent transitions, when a two-parent family was dissolved, were robustly associated with higher levels of child impaired functioning (Bachman et al. 2011).

This divergence in results may indicate that other factors are also playing a role. For instance, a transition from a single-parent to a two-parent family may not be detrimental if the child finds a new support figure or the family improves its socio-economic situation; similarly, transitioning from a two-parent family to a single-parent family may not be

disadvantageous if family conflict disappears. Thus, children's problems may also result from "pre-disruption effects" or turbulent family dynamics that may have preceded the transition or occurred at the time of the transition, such as marital conflict, parental psychopathology, poor parenting, or family dysfunction (Cherlin et al. 1998). Parental psychopathology may result into both poorer parenting practices and more marital instability, therefore accounting for the association between family structure transitions and child symptomatology (Capaldi and Patterson 1991). Conversely, effective parenting (e.g. warmth, monitoring, consistent discipline) may decrease during phases of family instability and as a consequence, children's internalizing and externalizing symptoms may increase (Forman and Davies 2003; Taylor et al. 1997). Thus, it is important to take into account the role of other parental factors when trying to understand the role of family structure and transitions on the development of child-psychiatric problems.

Family structure and transitions also vary by race and ethnicity (Dunifon and Kowaleski-Jones 2002; Phillips and Sweeney 2005). The percentage of married families across racial/ethnic groups is 75.7 % for White, 43.2 % for Black, 79.3 % for Asian, and 60.5 % for Hispanic populations. Among married families, 29.4 % of White families, 28.0 % of Black families, 18.7 % of Asian families, and 38.5 % of Hispanic families have a child under 18 (Vespa et al. 2013). Having a cohabiting parent is more common for a Hispanic child (4.7 %), than for children of other racial/ethnic groups (2.1 % for White, 2.9 % for Black and 1.4 % for Asian population) (Vespa et al. 2013). Nevertheless, cohabitation in Hispanic families is usually more stable than among other racial/ethnic groups (Manning 2004; Phillips and Sweeney 2005). While White-cohabiting parents had nearly ten times the risk of union disruption compared with married parents, there were no differences in the risk of separation for Mexican-American and Black couples (Osborne et al. 2007). Lately, family transitions are also becoming more frequent among Hispanic women living in the U.S., as 44 % of those who divorce will remarry within 5 years (Bramlett and Moshner 2002). When nativity is taken into account, family stability is greater for foreign-born Mexican Americans compared to native-born Mexican Americans (Osborne and McLanahan 2007).

It is also important to note that the relationship between living in a non-conventional family structure or experiencing changes in the family structure and child outcomes may not be the same across all racial/ethnic groups (Fomby and Cherlin 2007). Family instability seems to predict more behavior problems for Hispanic children (Osborne and McLanahan 2007) and less or none for Black children (Wu and Martinson 1993; Wu and Thomson 2001), compared with their White counterparts (Wu and Martinson 1993; Wu and Thomson 2001). These differences could be explained by variations in attitudes toward family structures based on racial/ethnic background. Oropesa (1996) found that mainland Puerto Ricans were the most accepting of cohabitation when compared with non-Latino White Americans and Mexican-Americans. These racial/ethnic differences in family structure and transitions illustrate why caution should be taken when studying different racial/ethnic subgroups. This is particularly relevant for Hispanic families, which combines several subgroups (Mexicans, Dominicans, Puerto Ricans, etc.) under a single category. We may be assuming that all groups are similar, have resembling family values, or come from the same background. These assumptions fail to consider the uniqueness for each particular group. In order to understand the role of family structure and transitions, cross-context integrative models that

study variations within one specific Hispanic subgroup instead of between Hispanic subgroups are necessary (García-Coll et al. 1996). Socioeconomic factors, highly confounded with race/ethnicity, may also play a role among women of low socioeconomic status, when childbearing outside marriage is more frequent (Cherlin 2010), and when cohabitation lasts longer and is less likely to end up in marriage (Lichter et al. 2006). We chose to focus on family arrangements of Puerto Rican families, as they seem to be at elevated risk compared with other Hispanic groups for future development of psychopathology (Alegría et al. 2008).

Previous studies attempting to understand the impact of family structure and transitions on child behavioral problems have a number of important limitations. These studies often did not differentiate between biological and step-parents in the cohabiting categories. They also relied on small sample sizes (Dunifon and Kowaleski-Jones 2002; Manning and Lamb 2003) or did not control for other potentially relevant parental factors (Hao and Xie 2001). Many have not used a representative sample or have only focused on toddlerhood (Bachman et al. 2012; Capaldi and Patterson 1991; Cavanagh and Huston 2006, 2008; Martinez and Forgatch 2002). Most studies assessed children's well-being in general, or the presence of symptoms, without determining the impact of such symptoms on children's lives, which is accomplished when the focus is on the diagnosis of psychiatric disorders, rather than only on symptoms (Bachman et al. 2012; Goodnight et al. 2013; Nepomnyaschy and Teitler 2013; Vargas et al. 2013). In addition, internalizing problems, such as anxiety and depression, which usually start in childhood and have long-term impact later in life, are remarkably less studied than externalizing behaviors or behavioral problems. Finally, almost all studies have been restricted to one specific context (e.g. US), raising concerns about the generalizability of the findings.

This paper presents a secondary analysis of data from the Boricua Youth Study, a longitudinal study which assessed psychiatric disorders and risk factors among Puerto Rican children aged 5–13 at baseline in two different sites: San Juan, Puerto Rico (PR) and the South Bronx, New York (Bird et al. 2006a, b). The main objective of the current analysis was to examine the influence of family structure and transitions on child psychiatric disorders in this population. First, we examined the influence of family structure (including cohabitation unions) on child psychiatric disorders, to verify, among Puerto Rican youth, if two-parent family structures would have a more beneficial impact on the development of psychiatric disorders compared with the single-parent family structure. Second, we hypothesized that Puerto Rican children whose families had experienced a family transition would have a higher risk of psychiatric disorders compared with those children living in a stable two-parent family (regardless of their marital status). Third, we examined whether other parental factors might have better explained possible effects of family structure or transitions towards child psychiatric disorders.

Method

Participants

The Boricua Youth Study includes representative probability samples of Puerto Rican children in two sites: the South Bronx (SB) in New York and in San Juan and Caguas metropolitan areas in PR. Each sample was selected to represent the population of Puerto

Rican children in each context. Children (age 5–13 at Wave 1), with at least one caretaker who self-identified as being of Puerto Rican background, were followed over three waves one year apart (2000–2004). A maximum of three siblings, randomly selected if more children were eligible, were included per household. In the full sample, at Wave 1, 89 % of the adult informants were biological mothers, 4.5 % grandmothers, 2.8 % adoptive mothers or stepmothers, and 1.8 % biological fathers. For this specific analysis, only children who participated in all three waves were included to ensure that changes on family structure at each wave were properly captured (SB: $n = 940$; PR: $n = 1,202$).

Procedure

Both parents and children were interviewed in their homes. Participation rates were 80.5 % in SB and 88.7 % in PR. Participant retention rate after three waves was greater than 85 %. The study was approved by the institutional review boards of the New York State Psychiatric Institute and the University of Puerto Rico Medical School. All adult participants provided informed consent for their child to participate in the study and their children provided their assent. More detailed information about the study methodology is provided elsewhere (Bird et al. 2006a, b).

Measures

Family structure was defined by the number of co-resident parents and parental figures and their union status. According to who they lived with, children were divided into five types of families at Wave 1: (a) two married bio-parents (reference category); (b) two cohabiting bio-parents; (c) cohabiting with at least one step-parent; (d) married with at least one step-parent; (e) one single-parent.

Family transitions were defined as the “entry or departure of a partner from the child’s household” (Fomby and Estacion 2011) at Waves 2 or 3, in relation to Wave 1. Due to the need to abbreviate the assessment during follow up, in Waves 2 and 3, the specific nature of the union for two-parent families (married or cohabiting) was not assessed. We operationalized the definition of “transition” as the change from a two-parent family (married, cohabiting, or step-parent or from (a) to (d) above) to a single-parent family (only one parent or (e) above) and vice versa; that is “a parent entry into or exit from a cohabiting/marital union.”

A five-category variable was created to characterize different patterns of transitions across the three waves: (1) those who remained through the three waves in a stable two-parent family, married or cohabiting (stable two-parent, 2P), or the reference group; (2) those who remained through the three waves in a stable single-parent family (stable single-parent, S); (3) those who transitioned once from a single-parent family to a two-parent family, married or cohabiting, at any point during the three waves (1 transition, $S \rightarrow 2P$); (4) those who transitioned once from a two-parent family, married or cohabiting, to a single-parent family, i.e., separation or divorce, at any point during the three waves (1 transition, $2P \rightarrow S$); (5) those who transitioned two times at any point of the waves regardless of the type of transition (2 transitions, 2T).

Child psychiatric disorders were assessed with The Diagnostic Interview Schedule for Children-IV (DISC-IV) and its Spanish version (Bravo et al. 2001; Shaffer et al. 2000) at all study waves. Young children (less than 10 years old) did not provide information about the disorders; thus, only parent report was used for this analysis in order to include information for the entire age spectrum. There is evidence that mothers do provide reliable assessments related to their children's behaviors (Bird et al. 1992). Psychiatric diagnoses were grouped in two categories: internalizing disorders (social phobia, generalized anxiety, separation anxiety, panic disorder, post-traumatic stress disorder, and depressive disorders) and externalizing disorders (attention deficit hyperactivity disorder, conduct disorder, and oppositional defiant disorder). Two dichotomous variables were created (0 = not having disorder, 1 = internalizing or externalizing disorder). Internalizing and externalizing disorders at Wave 3 were the child outcomes while disorders at Wave 1 were used as covariates in the regression models (see below).

Parental psychopathology was measured using the Family History Screen for Epidemiologic Studies (FHE), a 17-item scale which screens for lifetime parental emotional problems (depression and suicide attempts), substance use, and antisocial behaviors (Lish et al. 1995) with good psychometric properties (specificity: 65.0–93.5; sensitivity: 56.0–86.8; and Kappa 0.56 for test–retest reliability of self-reports) (Weissman et al. 2000).

Social support was measured by parental responses about the availability of and satisfaction with the social support they received. Whether a person had help from their spouse or partner, relatives, friends, and neighbors was assessed with 15 items (Thoits 1995). The scale internal consistency yielded a Chronbach α value of 0.78 in the SB and 0.62 in PR.

Familism, or value attributed to family relationships, was assessed through parental responses to an abbreviated, adapted version of the Sabogal Familism Scale, a 4-point Likert scale (strongly agree–strongly disagree) with 10 items (Sabogal et al. 1987). It assesses one's values and attitudes related to familial obligations, support from family, and family as referents. The scale internal consistency yielded an α value of 0.77 in SB and 0.76 in PR.

Parental warmth was measured through parental responses to 13 items from an abbreviated version of the Hudson's Index of Parental Attitudes (Hudson 1982). Response options were in a 4-point Likert scale. The measure comprises items about trust, closeness, understanding, and feelings between the mother and the child. A closer, more positive relationship is indicated by higher scores on the scale. The scale's internal consistency yielded an α value of 0.80 both in SB and in PR.

Parental monitoring was measured through parental responses to a 4-point Likert-type scale with 9 items that assessed parental control over the child's daily activities, such as playing video games, watching television, and other activities inside/outside the household. It also measures curfews and parent awareness of the location of their children. High levels of parental monitoring are represented by greater scores on the scale (Patterson and Stouthamer-Loeber 1984). The scale internal consistency yielded an α value of 0.55 in SB and 0.51 in PR.

Socio-demographic variables measured at Wave 1 (parental report) included: child gender (0 = female, 1 = male) and child age at Wave 1 (0 = 5–9 years old, 1 = 10–13 years old). Socio-economic status was also coded as a dichotomous variable (0 = above Federal Poverty Line, 1 = below Federal Poverty Line). Maternal education was coded as a categorical variable (0 = < high school, 1 = high school, 2 = college +). Mother's age was included as a continuous variable.

Data Analyses

Children were categorized according to their family structure at Wave 1 and according to their pattern of family transitions over the course of the three study waves. We calculated means/proportions and standard errors for Wave 1 variables, including family structure and transitions, socio-demographic factors, parental factors, and child psychopathology. We tested for baseline differences between the two sites using *t*-tests for continuous variables and chi-squared tests for categorical variables. Next, two sets of logistic regression analyses were conducted. All analyses were stratified by site (SB and PR) because the value given to the family, and consequently the meaning of family structure and family transitions, was presumed to differ between the two study contexts. One set of models related the type of family structure (at Wave 1) to the likelihood of a Wave 1 internalizing or externalizing disorder (binary outcomes). The second set of models related family transitions over the three waves to the likelihood of a Wave 3 internalizing or externalizing disorder. These models were adjusted for potential confounders measured at Wave 1. In order to best understand relevant processes leading to our results, we examined a hierarchical series of increasingly complex models. Model 1 included only the main predictor; either family structure or family transitions. Model 2 also included socio-demographic factors (child age and gender and a socioeconomic variable). Model 3 further included parental factors frequently associated with the psychological disorders in children (parent psychopathology, social support, familism, parental warmth, and parental monitoring). Finally, Model 4 was additionally adjusted for the presence of any child psychiatric diagnosis (internalizing or externalizing) at Wave 1. Wave 1 child psychiatric diagnosis served as a proxy for child functioning prior to a family transition, aiming to reduce confounding due to the selection factors associated with family change (Brown 2006). Adjusted odds ratios (AOR) and 95 % confidence intervals (95 % CI) for family structure or family transitions were derived from the models. Data were analyzed using SAS software, version 9.3. All analyses were adjusted for differences in the probability of selection resulting from the sampling design (strata and clustering) and were weighted to reflect the 2000 Census.

Results

Table 1 summarizes descriptive statistics of the main variables for each site. Family structure differed significantly by site ($\chi^2 = 136.09, p < 0.0001$). At Wave 1, living in a biological-parent married family was more prevalent in PR (PR: 44.98 %; SB: 16.02 %) and living in a single-parent family was more prevalent in the SB (PR: 27.52 %; SB: 43.85 %). In PR, 13.55 % were cohabiting families while 19.74 % were cohabiting families in the SB. 72.47 % were two-parent families (married or cohabiting, biological or non-biological relationship) in PR and 56.16 % in the SB. Family transitions also differed significantly by

site ($\chi^2 = 63.62$, $p < 0.0001$). Being in a stable 2-parent family throughout the three waves was the most frequent category in both sites (PR: 63.06 %; SB: 40.94 %). Families in the SB (29.2 %) were more frequently stable single-parent families throughout the waves compared with families in PR (18.1 %). Children did not differ significantly on either internalizing or externalizing disorders by site at either Wave 1 ($p = 0.2701$ and 0.6979 , respectively) or Wave 3 ($p = 0.3452$ and 0.3076 , respectively).

Table 2 presents the association between family structure (Wave 1) and child psychiatric disorder (Wave 3). Family structure was not associated with internalizing disorders. In the SB only, family structure was associated with externalizing disorders, with positive and significant coefficients for two of the four family structure categories. Children in married step-parent and single-parent households reported more behavioral problems than did children in married biological-parent households (Model 1, OR = 3.04; 95 % CI [1.14, 8.14]; OR = 2.66; 95 % CI [1.00, 7.10], respectively). When controlling for parental factors (Model 3), the set of family structure variables was no longer significant.

Table 3 presents analyses parallel to those described in Table 2, with family transitions as the main independent variable of interest. Family transitions were not associated with externalizing disorders. In PR only, being in a two-parent family that transitioned to a single-parent family once was related to child internalizing disorders. This relationship remained significant after adjusting for demographic, parental and child psychiatric disorders at Wave 1 (Model 4, AOR = 4.43; 95 % CI [1.54, 12.68]). This association was not fully explained by other child (gender, age, or child psychiatric disorder) and parent characteristics (psychopathology, social support, familism, and monitoring) assessed at Wave 1.

Discussion

In this study, we sought to extend previous literature on family arrangements by assessing, using a two-context longitudinal design, the association between family structure and transitions with internalizing and externalizing psychiatric disorders among Puerto Rican children. No specific family structure was associated with a psychiatric disorder. Family transitions were not associated with externalizing disorders. In PR only, being in a two-parent family that transitioned to a single-parent family once was related to child internalizing disorders.

Overall, our results suggest that Puerto Rican children living in a family structure that is different from the married biological-parent family structure do not necessarily fare worse. This specific Hispanic subgroup (Puerto Ricans), examined in two contexts, behaved differently from other populations in which children raised in family structures which included cohabiting biological-parents, cohabiting step-parents, or single-parent families were more likely than those in married biological-parent families to display behavior problems (Deleire and Kalil 2002; Manning and Lamb 2003).

We also found that marital status (married or cohabiting) did not have a differential effect on child psychiatric disorders. A possible explanation is that cohabitation may be closer to marriage among Puerto Rican families than among other groups (Manning and Landale

1996). Informal unions are common in the Caribbean region and on the island of PR. Cohabitation itself has been documented since the beginning of the Spanish presence in the sixteenth century (Landale et al. 2006). Another unique situation that distinguishes Puerto Ricans from other Hispanic groups is their legal status as U.S. citizens since 1917. This eliminates the necessity of marriage as a pathway to obtaining citizenship. A study found that Puerto Rican women were more accepting of cohabitation than other Hispanic and non-Hispanic sub-groups (Oropesa 1996) and the subjective meaning Puerto Ricans gave to cohabitation was as an “informal marriage” (Landale and Fennelly 1992). This could potentially explain why parental cohabitation is not strongly related to the development of psychiatric disorders in children.

We also did not find differences in the relationship between family structure and child psychiatric disorders by context (PR or SB). This is different from Fomby and Estacion’s (2011) findings, according to which children from cohabiting US-born mothers of Puerto Rican background experienced higher rates of externalizing behavior problems, while their counterparts, children from cohabiting native-born (PR) mothers, did not. However, the two studies are not very comparable since their primary interest was cohabitation at birth and we were measuring cohabitation at ages 5–13. This suggests that cohabitation may be important in earlier periods of development for those children who migrate while the difference may disappear if cohabitation occurs in later periods of life.

Due to the limitations of our data, we could not examine changes (or transitions) in family structure related to cohabitation. However, we were able to consider the general category of two-parent families (both cohabiting and married) as the reference family type for testing the instability hypothesis, which states that family instability would impact child psychiatric disorders.

We identified one study of Puerto Rican mothers and their children which focused on cohabitation and child behaviors (Fomby and Estacion 2011). It is important to note that this study included several limitations, and even though they differentiated between children from U.S. born and mainland born mothers, it was restricted to only one context (US). Landale and Ogena (1995), on the other hand, did examine Puerto Rican family structures and transitions in two-contexts, but without studying their association with child behaviors. Her study showed that migrant Puerto Ricans tended to have a pattern of earlier informal unions and higher rates of union dissolution than non-immigrants. Our results provided only partial support for the instability hypothesis; previously corroborated by another study with the US Hispanic population, which did not focus on a specific Hispanic subgroup or distinguish between types of psychiatric disorders (Osborne and McLanahan 2007). Consistent with the transitions hypothesis, we found that children in a stable single-parent family who did not experience any transitions along the three waves did not differ from those in a stable two-parent family (Cherlin 2009; Najman et al. 1997; Yang and Kramer 2012). We did not find any differences in the rate of externalizing disorders, neither in PR nor in the SB, when we compared those who experienced one transition and those who did not experience any. However, when considering internalizing disorders, differences were detected in PR.

Unlike earlier studies, we were able to ascertain that the risk of child psychiatric disorders was shaped by the type of disorder and context. Interestingly, the only type of transition which had an impact on child internalizing psychiatric disorders in PR was being in a two-parent family and transitioning to a single-parent family. Puerto Rican children who transitioned to a single-parent family had more than four times greater odds of internalizing disorders than children in stable two-parent families, even after controlling for age, gender, poverty, and other variables. This may indicate that there are contexts where transitions may have a negative impact. It is also likely that breaking up a relationship, rather than starting a new one, would be the specific change related to children's emotional problems (Bachman et al. 2011; Ryan and Claessens 2013; Waldfogel et al. 2010).

Contrary to the notion that the number of transitions functions cumulatively with each transition increasing the probability of developing problems in children, we found no significant differences between those children in families that have transitioned twice and those who were living in a stable two-parent family (Bachman et al. 2011; Cavanagh and Fomby 2012; Fomby and Cherlin 2007). The National Longitudinal Survey of Youth (NLSY) reported that multiple transitions were not associated with higher levels of child behavioral problems (Carlson and Corcoran 2001). Ryan and Claessens (2013) also found that two transitions were not associated with increasing internalizing or externalizing problems compared to children from long-term divorced parents; suggesting that if a transition to a single-parent family is followed by re-partnering quickly enough, problems associated with the movement to a single-parent family may be prevented.

Different explanations may account for our results. First, acculturation, a phenomenon that involves the integration of values and norms resulting from close contact with another culture, may have an important role in explaining PR and SB differences. American cultural values are more common in Puerto Rican children living in the SB than among those living in PR (Duarte et al. 2008). High acculturation levels have been robustly related to lower levels of family cohesion which may indicate lower identification with values like family stability and cohesiveness (Gil and Vega 1996). Accordingly, if a transition takes place, in particular from a two-parent family to a single-parent family, its impact may differ by site. It is possible that those in the SB are more acculturated and probably experiencing less family cohesion. They may also be less affected by disruptions in the two-parent family structure as it may not be such a strong value to them. The overall idea would be that rules or expectations of behaviors (norms) may influence attitudes towards family composition and how, ultimately, transitions would impact an individual and potentially affect the development of child psychiatric disorders.

Second, we argue that racial/ethnic differences may play an important role in the pattern of results we described. The literature has shown weaker or no such association between transitions and child psychiatric disorders for Black children compared with White children (Fomby and Cherlin 2007; Wu and Martinson 1993; Wu and Thomson 2001). Fomby et al. (2010) suggest that the adverse effects of family instability may be attenuated in certain populations due to their socio-economic characteristics and the availability of extended family support. Most Puerto Rican families live under the poverty line; being at the bottom in the majority of economic well-being measures when compared with other Hispanic

groups (Tienda and Mitchell 2006). As part of the family stress hypothesis, if we consider a family transition as a single stressful event, it may be experienced as just one more adverse experience among several other stressful events they may be experiencing. Also, single-parenting and family transitions may have become normative in certain low-income communities (Bachman et al. 2011). As a consequence, adaptive strategies towards stressful situations may have grown among these families, reducing the likelihood of child psychiatric disorders. Thus, children who experienced two transitions might have gotten used to instability. Another relevant point is that the availability of extended family or an important constant adult (school, sports) may be playing an important role for the child as a source of extra emotional support. Having a stable reference person apart from the changing parental figures may attenuate the repercussion that family transitions could have on children's well-being. Accordingly, Fomby et al. (2010) speculate that other social factors may also protect against the development of a psychiatric disorder. Puerto Rican families may be more likely than White families to continue residing in the same neighborhood after undergoing a family transition; which may prevent them from losing their surrounding extended network. It is also possible that a methodological limitation (low number of families with two transitions) could account for our results.

Our findings provide a better understanding of how context can modify how family transitions may influence the lives of Puerto Rican children. Our analyses indicate that only in PR a transition from a two-parent to single-parent family was associated with an increase in the likelihood of a child developing an internalizing disorder. Context may be a differential factor shaping this risk. Being in an intact family, in this case with two-parental figures consistently over time, regardless of marital status, however who is present in the child's life, may be of more importance in PR compared to the SB, and therefore disruptions in this family structure may have a stronger impact on child outcomes.

We also aimed to understand whether other parental factors could better explain the association between family structure, transitions, and children's psychiatric disorders. None of the parental factors that we examined accounted for the association between transitioning from a two to a single-parent family in PR, even when those factors were strongly related to child psychopathology (such as having a parent with a psychiatric disorder or lack of parental warmth). Our findings are in consonance with the results of a previous study and actually extends these findings, as such study did not include the same parental factors (only controlled for parent knowledge of activities and parent-child relationship quality) (Donahue et al. 2010). Finally, no socio-economic factor accounted for the association between family structure transitions and changes in child psychiatric disorders.

Study strengths include the large population-based sample selected probabilistically, the two-context and longitudinal design, a high compliance rate at follow-up, and the use of a standardized psychiatric diagnostic interview. Some study limitations also apply. First, the assessment of child disorders is based on an adult report which can lead to an underrepresentation of certain disorders; particularly of internalizing disorders. Second, the available data did not allow us to distinguish specific family-structure and transitions like cohabitation, reasons for parental absence (death, divorce, temporary separations), or the length of time since the separation and quality of the relationship (i.e., conflict) between the

caretakers. Moreover, we have examined three waves of measurements recorded only 1 year apart. Results may differ when longer periods are taken into account. Also, information about most parental factors (social support, familism, parental warmth, and education) was based exclusively on self-report from one caretaker. A more complete picture could have been obtained if both caretakers could have been interviewed at the different time points. Future studies should address these factors, if possible.

Despite these limitations, we provide evidence that cohabitation or family transitions may not be associated with negative child psychiatric outcomes. The traditional conceptualization of family and its changes may not relate to Hispanic children's development in specific ways. Additionally, trying to understand all Hispanic subgroups as one single entity and ignore the context where children are raised may not be appropriate. For some ethnic groups, living in a cohabiting family may not increase children's probability of developing an internalizing or externalizing disorder. Determining significant correlates of family transitions can provide relevant input for the prevention of psychiatric disorders in this population. Public health, school-based, or outpatient interventions targeting children in PR should take into account that transitioning to a single-parent family may have an impact on children's likelihood of developing an internalizing psychiatric disorder.

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Table 1Descriptive statistics, Boricua Youth Study, Wave 1 ($N = 2,142$)

Variables	PR (<i>n</i> = 1,202)		SB (<i>n</i> = 940)		Test Statistic
	Percentage/mean	SE	Percentage/mean	SE	
<i>Structure, % (W1)</i>					
Married bio-parents	44.98	2.48	16.02	1.60	136.09 ^{b***}
Cohabiting bio-parents	8.01	1.18	13.57	1.54	–
Cohabiting step-parents	5.54	0.82	6.17	1.03	–
Married step-parents	13.94	1.38	20.4	1.47	–
Single-parent	27.52	2.51	43.85	2.39	–
<i>Transitions (W1–W3), %</i>					
Stable 2-parent	63.06	2.77	40.94	2.32	63.62 ^{b***}
Stable single-parent	18.05	2.00	29.20	2.1	–
1 Transition (S→2p)	7.22	1.11	11.21	1.2	–
1 Transition (2p→S)	6.27	0.74	10.38	1.15	–
2 Transitions	5.40	0.87	8.27	0.98	–
<i>At Wave 1:</i>					
Age, %					
5–9 years	52.79	1.84	52.58	1.67	0.01 ^b
10–13 years	47.21	1.84	47.42	1.67	–
Gender, %					
Males	48.61	1.60	48.99	1.44	0.031 ^b
Females	51.40	1.60	51.01	1.44	–
Poverty, %					
Above FPL.	26.97	2.10	34.37	2.21	5.74 ^{b*}
Below FPL.	73.03	2.10	65.63	2.21	–
Mother's age, <i>M</i> (<i>SE</i>)	34.59	0.31	34.09	0.27	1.54 ^a
Mother's education, %					
<High school	24.28	2.50	47.02	2.24	82.43 ^{b***}
High school	44.11	2.64	43.25	2.1	–

Variables	PR (<i>n</i> = 1,202)		SB (<i>n</i> = 940)		Test Statistic
	Percentage/mean	SE	Percentage/mean	SE	
College +	31.61	2.56	9.73	1.38	–
Parent psychopathology, %	37.69	2.07	27.66	1.79	13.19 ^{b***}
Social support (parent), <i>M</i> (<i>SE</i>)	1.79	0.02	1.07	0.02	658.14 ^{a***}
Familism (parent), <i>M</i> (<i>SE</i>)	2.25	0.02	2.24	0.02	0.00 ^a
Maternal acceptance, <i>M</i> (<i>SE</i>)	2.43	0.02	2.47	0.02	4.10 ^{a*}
Parental monitoring, <i>M</i> (<i>SE</i>)	13.60	0.11	14.16	0.10	14.97 ^{a***}
Youth diagnosis, %					
Internalizing (W1)	8.27	1.00	6.88	0.79	1.22 ^b
Externalizing (W1)	10.88	0.95	10.30	1.13	0.15 ^b
Internalizing (W3)	3.72	0.70	4.64	0.65	0.89 ^b
Externalizing (W3)	7.57	0.98	9.04	1.08	1.04 ^b

Note: Weighted data

^a *F*-value

^b Rao-Scott Chi-Square;

* $p < .05$;

** $p < .01$;

*** $p < .001$

Table 2

Logistic Regression Analysis: Family Structure at Wave 1 and Child Psychiatric Disorders at W3 ($N = 2,142$)

Internalizing																									
PR ($n = 1,202$)																									
Model 1						Model 2 ^a				Model 3 ^b				Model 1				Model 2 ^a				Model 3 ^b			
B	SE	OR	B	SE	AOR	B	SE	AOR	B	SE	AOR	B	SE	AOR	B	SE	AOR	B	SE	AOR	B	SE	AOR		
Structure: (married bio-parents, Ref)																									
Cohabiting bio-p	-0.35	0.55	0.71	-0.36	0.58	0.70	-0.47	0.57	0.62	0.11	0.49	1.12	0.22	0.50	1.25	0.25	0.44	1.29							
Cohabiting step-p	0.35	0.48	1.42	0.32	0.49	1.38	-0.02	0.57	0.98	-0.17	0.74	0.84	-0.08	0.73	0.93	-0.48	0.78	0.62							
Married step-p	0.26	0.33	1.30	0.23	0.34	1.26	-0.07	0.40	0.93	-0.22	0.53	0.80	-0.17	0.54	0.85	-0.34	0.56	0.71							
Single-p	0.22	0.36	1.25	0.19	0.36	1.21	-0.15	0.39	0.86	0.56	0.44	1.76	0.70	0.46	2.00	0.15	0.46	1.17							
Externalizing																									
PR ($n = 1,202$)																									
Model 1						Model 2 ^a				Model 3 ^b				Model 1				Model 2 ^a				Model 3 ^b			
B	SE	OR	B	SE	AOR	B	SE	AOR	B	SE	AOR	B	SE	AOR	B	SE	AOR	B	SE	AOR	B	SE	AOR		
Structure: (married bio-parents, Ref)																									
Cohabiting bio-p	0.24	0.41	1.27	0.05	0.40	1.06	-0.40	0.35	0.67	0.77	0.52	2.16	0.77	0.54	2.15	1.00	0.69	2.73							
Cohabiting step-p	0.49	0.37	1.63	0.34	0.39	1.40	-0.02	0.47	0.98	0.69	0.76	2.00	0.71	0.77	2.03	1.45	0.89	4.28							
Married step-p	0.51	0.30	1.67	0.40	0.31	1.49	0.02	0.39	1.02	1.11 [*]	0.50	3.04	1.19 [*]	0.54	3.29	1.16	0.65	3.18							
Single-p	0.52	0.28	1.69	0.42	0.28	1.52	0.11	0.30	1.11	0.98 [*]	0.50	2.66	1.05 ^b	0.56	2.86	1.03	0.67	2.81							

Note: Unstandardized logistic coefficients with odds ratio

OR odds ratio, AOR adjusted odds ratio

^a Adjusted for demographics: age, gender, poverty (omitted from the table)^b Adjusted for parent factors: mother's age, mother's education, parent psychopathology, social support, familism, maternal acceptance, parental monitoring (omitted from the table). Structure Predictors coded as 1 for yes and 0 for no. Married bio-parent is the reference category^{*} $p < 0.05$;^{**} $p < 0.01$;^{***} $p < 0.001$

Logistic Regression Analysis: Family Transitions W1-W3 and Children's Psychiatric Disorders at W3 ($N = 2,142$)

Note: 2P: stable two-parents; S: Stable single-parent; 2P to 2P: one transition from two-parents to two-parents; S to 2P: one transition from single-parent to two-parents; 2P to S: one transition from two-parents to a single-parent; S to S: one transition from single-parent to single-parent. Unstandardized logistic coefficients with odds ratio in the second column

OR odds ratio, AOR adjusted odds ratio

^b Adjusted for parent factors: mother's age, mother's education, parent psychopathology, social support, familism, maternal acceptance, parental monitoring (omitted from the table)

^cAdjusted for diagnosis at baseline: externalizing disorder at W1 (omitted from the table). Transitions Predictors coded as 1 for yes and 0 for no. Stable 2-parent is the reference category

* $p < 0.05$;

**
 $p < 0.01$;

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