Parent-adolescent relationships in Hispanic versus Caucasian families: Associations with alcohol and marijuana use onset

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Abstract

Parent-adolescent relationship (PAR) factors such as social support and negative interactions are associated with initiation of alcohol and marijuana use during adolescence. However, few studies have examined whether the relationship between PAR, especially the paternal role, and substance use onset varies by ethnicity. This is important given that ethnic group differences have been related to alcohol and marijuana use, cultural values and parenting. This study examines whether ethnicity moderates the prospective prediction of substance use onset by PAR factors. The sample comprised 124 adolescents who self-identified as Hispanic and 795 adolescents who self-identified as non-Hispanic Whites, and was drawn from an ongoing longitudinal survey on adolescent substance use. Discrete-time survival modeling was used to prospectively predict age at onset of substance use among participants who were substance-naïve at baseline. Interactions between ethnicity and PAR factors indicated that PAR factors had a larger influence on age of alcohol and marijuana onset for Hispanics than for Caucasians. Among Hispanics, greater social support from and greater negative interactions with the father-figure were more predictive of earlier onset of alcohol, and greater social support from the mother-figure was more predictive of later alcohol onset, compared to Caucasians. Similarly, greater negative interactions with the father-figure were more predictive of earlier onset of marijuana use among Hispanics than among Caucasians. These findings suggest the influence of PAR on alcohol and marijuana use onset may be larger for Hispanics than for Caucasians. Incorporating these parenting factors in substance use prevention programs advances public health in a culturally sensitive manner that is relevant to at-risk Hispanic adolescents.

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Keywords

Ethnicity; Hispanic; Adolescents; Parents; Parent-Adolescent Relationships; Paternal Role; Alcohol use; Marijuana use

Alcohol and marijuana are the two most commonly used substances by adolescents in the United States (Johnston 2016 MTF reference). Early initiation of alcohol and marijuana use is a public health concern given the rapid progression from first use to escalation of more frequent and hazardous use during adolescence (Carliner et al., 2016; Fidalgo et al., 2016; Robinson & Riggs, 2016; Stone, Vander Stoep, & McCauley, 2016). Consequences of adolescent alcohol and marijuana use are vast, and include increased likelihood of being involved in a motor vehicle crash, suicide, engaging in violent behaviors, and experiencing co-occurring mental health concerns (Bukstein, 2016; Fishman, 2016; Kaminer, 2016; Tarter & Horner, 2016; Watson, Greene, & Kelly, 2014; Windle & Davies, 1999; Zaman et al., 2015). Further, only one in ten adolescents meeting criteria for substance use disorder actually receive treatment (Substance Abuse and Mental Health Services Administration, 2015). This underutilization is particularly true for Hispanic adolescents (Substance Abuse and Mental Health Services Administration, 2015). Research also consistently indicates that parent-adolescent relationships (PAR) play a significant role in adolescent's substance use behaviors (Trucco, Colder, Wieczorek, Lengua, & Hawk, 2014). However, more research is needed to investigate ethnic differences that consider both the father- and mother-figure on PAR and adolescent substance use. Assessing both parents allows us to understand if differences in familial relationships from different ethnic groups uniquely impact adolescent alcohol and marijuana use.

Ethnic Differences and Adolescent Alcohol and Marijuana Use

Prevalence rates of substance use differ across ethnic groups (Miech et al., 2015). Hispanic adolescents report more alcohol use, binge drinking behaviors, and marijuana use than their Caucasian counterparts (Johnston, O'Malley, Bachman, & Schulenberg, 2016). Hispanic adolescents also tend to initiate alcohol and marijuana use earlier compared to Caucasians and so may be at greater risk for future escalation of use and comorbid mental health problems (Miech et al., 2015). Additionally, ethnic minority adolescents (e.g., Hispanics) tend to underutilize programs for substance use more so than Caucasians (Burrow-Sánchez, Minami, & Hops, 2015; Saloner, Carson, & Cook, 2014). Although efforts to improve underutilization of substance use treatment programs have been evaluated across cultural groups (Greenfield et al., 2007; Hser et al., 2001), few studies have focused on Hispanic adolescents (Burrow-Sánchez et al., 2015; Saloner et al., 2014). This is particularly true for substance use programs that incorporate parents into treatment (Coatsworth, Pantin, & Szapocznik, 2002; Estrada, 2015; Prado et al., 2012; Szapocznik et al., 1991; Szapocznik et al., 1988). There are reasons to suspect Hispanics may respond differently to particular involvement of parents, compared to other minorities, because of specific cultural values regarding the family.

Cultural Values within Hispanic Families

Cultural values and traditions impact family and parenting relationships and are particularly prominent within Hispanic families. *Familismo*, conceptualized as the value on family as the primary source of social support and identity (Romero & Ruiz, 2007; Smith-Morris, Morales-Campos, Alvarez, & Turner, 2013; Warner et al., 2006), continues to play a more significant role for Hispanics as compared to Caucasians (Marin & Gamba, 2003; Morales-Campos, Alvarez, & Turner, 2013). *Familismo* highlights intimate family bonds built on loyalty and solidarity throughout one's life (Marin & Gamba, 2003; Ramirez et al., 2004). The same has been noted with *respeto*, typically conceptualized as the Hispanic value to maintain respectful hierarchical relationships within the family (Gil et al., 2000). For many Hispanic families, *respeto* provides an honor and respect to one another in relation to the family system; this is especially true for adolescents honoring both father and mother and the eldest in the families (Soto et al., 2011). These two culturally specific and commonly shared values among Hispanic families have been found to predict lower rates of substance use (Guilamo-Ramos, Bouris, Jaccard, Lesesne, & Ballan, 2009; Guilamo-Ramos, Bouris, Jaccard, Lesesne, Gonzalez, et al., 2009; Romero & Ruiz, 2007). Families that value *familismo* may serve as a source of inspiration, strength, and support against threats that put adolescents at risk for initial alcohol and marijuana use, as well as escalation to abuse or comorbid psychiatric conditions (Campos et al., 2014; Cupito et al., 2016; Marquez & Ramirez Garcia, 2013). Similarly, *respeto* may also serve as a source of harmony within the family. Through this cultural value, adolescents may respect and honor parental structure, rules, and attitudes towards alcohol and marijuana use (Soto et al., 2011). These two constructs may describe differential relational effects of parenting behaviors on alcohol and marijuana use between Hispanics and Caucasians.

Quality of Parent-Adolescent Relationships and Adolescent Substance Use

The nature of parent-adolescent relationships (PAR) can be characterized and quantified along a number of positive and negative dimensions. Positive PAR is characterized by supportive, nurturing, and encouraging parent behaviors and companionship between the parent and adolescent, whereas negative PAR is characterized by parent antagonism or criticism of the adolescent, or by conflict between the parent and adolescent (Ryan, Jorm, Lubman, 2010). Across races and ethnicities, the quality of PAR is associated with adolescent alcohol and marijuana use (Ryan, Jorm, Lubman, 2010). For example, adolescents whose parents embody positive dimensions of PAR tend to be less likely to initiate alcohol use (Cleveland, Feinberg, Osgood, & Moody, 2012; Jones et al., 2005; Koning, van den Eijnden, Verdurmen, Engels, & Vollebergh, 2012; Trucco, Colder, Wieczorek, Lengua, & Hawk, 2014) and marijuana use (Cleveland et al., 2012; J. L. Kamon, Stanger, Budney, & Dumenci, 2006; Marsiglia, Nagoshi, Parsai, Booth, & Castro, 2014). The protective effects of positive PAR persist into adulthood, as evidence suggests positive PAR prospectively predicts less problematic alcohol use (Ryan, Jorm, Lubman, 2010), and less use of tobacco, marijuana, and other illicit substances later in life (Branstetter, Low, Furman, 2011; Ledoux, Miller, Choquet, Plant, 2002). Conversely, negative dimensions of PAR have been shown to lower age of alcohol and marijuana onset (e.g., Abar, Fernandez, Wood, 2011), as well as predict more problematic use later in life (Kamon, Budney, &

Stanger, 2005; Kamon et al., 2006; Stanger, Budney, Kamon, & Thostensen, 2009). Negative dimensions of PAR may disrupt family cohesiveness, important values of positive authority, and overall support, all of which serve as protective factors for adolescent substance use (Schwarz, B., Mayer, B., Trommsdorff, G., Ben-Arieh, A., Friedlmeier, M., Lubiewska, K., & … Peltzer, K., 2012; Schwarz, B., Trommsdorff, G., Albert, I., & Mayer, B., 2005).

Importantly, studies to date have not accounted for ethnic differences in the relationship between positive and negative dimenstions of PAR and adolescent alcohol and marijuana use. The cultural values described above shape parent-adolescent relationships within Hispanic families. For example, through the cultural values of *familismo* and *respeto*, adolescents may respect and honor parental structure, rules, and attitudes towards alcohol and marijuana use (Soto et al., 2011).

Although existing data on the effect of PAR factors on adolescent alcohol and marijuana use have consistently shown significant associations (Cleveland, Feinberg, Osgood, & Moody, 2012; Koning, van den Eijnden, Verdurmen, Engels, & Vollebergh, 2012; Trucco, Colder, Wieczorek, Lengua, & Hawk, 2014), most of the PAR literature has only considered the maternal role within this interaction. Studies that have examined the father-figure in relation to PAR and substance use (Okulicz-Kozaryn, 2010) have tended to focus relatively narrowly on the influence of individual paternal predictors of adolescent alcohol and/or marijuana use, such as paternal: communication quality (Friedman, Ali, & McMurphy, 1998; Jordan & Lewis, 2005; Kafka & London, 1991; Stern, Northman, & Van Slyck, 1984); substance use (Brooks, et al., 2002); support (e.g., van der Zwaluw et al., 2008; van der Zwaluw et al., 2006); supervision (Cookston, 1999); and conflict (Jordan, 2005). Therefore, an important gap in the literature is the lack of studies that have jointly modeled the individual influences of the father and the mother.

The Current Study

Given that the prevalence rates of alcohol and marijuana use are higher among Hispanic adolescents than Caucasian adolescents and that parents play a large role in shaping Hispanic substance use behaviors, it is important to examine the extent to which the effect of PAR on alcohol and marijuana use onset varies for Hispanic adolescents as compared to Caucasians. In this study, we investigated if ethnicity moderates the relationship between positive and negative dimensions of mother- and father-figure PAR and alcohol and marijuana use onset. We expected the positive effects of supportive parental interactions to be stronger for Hispanics as compared to Caucasians, and the harmful effects of negative parental interactions to be reduced for Hispanics as compared to Caucasians. A more thorough understanding of these ethnic differences will inform the development of culturally specific substance use preventive programs that incorporate both paternal and maternal roles in the family systems framework.

METHOD

Participants

Data for this study are drawn from an ongoing longitudinal study (funded by grant #R01 AA01683 awarded to K. Jackson) of the contextual factors that influence the initiation and progression of alcohol use during adolescence. Adolescents (N=1,023) were recruited from six Rhode Island middle schools (equally from 6th, 7th, and 8th grade), with data collected from five cohorts enrolled six months apart (Jackson et al., 2014). For the present study, excluding 104 non-Hispanic non-Caucasians of varying ethnicities, we identified 124 Hispanics (53% female) and 795 non-Hispanic Caucasians (51% female) for whom we have follow-up data on substance use and PAR variables. We conducted attrition analyses to examine whether characteristics associated with key study variables predicted 4-year follow-up nonresponse. Ethnicity did not significantly predict nonresponse (26% among Hispanics, % among Caucasians), although boys were more likely than girls to be absent at the four-year follow-up; Pearson χ^2 t(1021) = 15.60, $p < .001$), as were older versus younger adolescents (Pearson χ^2 t(1021) = −2.47, $p < .01$).

Procedures

Study information was provided to all eligible adolescents via a mailed packet to the student's home and by faculty in schools (for details, please see Jackson, Colby, Barnett, & Abar, 2015). Interested adolescents who had written parental consent to participate in the study were invited to an orientation. After assent was collected participants completed a computerized, 45-minute baseline survey (Time 1) and a semi-annual, web-based surveys for two years (Times 2–5), at three-year follow-up (Time 6), and at quarterly intervals thereafter, from which we coded a four-year follow-up (Time 7). Participants were compensated $25 for completion of the baseline survey and $20 for each completed follow-up survey. Response rates ranged from 78.9% for Time 7 to 92% for Time 2. All study procedures were approved by the University's Institutional Review Board and a Certificate of Confidentiality was obtained from NIAAA to protect participant confidentiality.

Measures

Demographic information—Participants provided information regarding gender, age, race, and ethnicity. Hispanic ethnicity was assumed when participants responded 'Yes' to the question: "Are you Hispanic or Latino?". Caucasian was assumed when participants responded 'No' to that same question, and responded only 'White' to the question: "What is your race? (Please select all that apply)" with options: American Indian or Alaskan Native, Asian, Black or African American, Native Hawaiian or Other Pacific Islander, White, or Other.

Alcohol and Marijuana Use Onset—Participants reported on their substance use, including alcohol and marijuana use, at each survey. Participants indicated whether they had ever consumed a full drink of alcohol (onset of full drink), that wasn't part of a religious occasion. Participants also indicated whether they had ever used marijuana (pot, hash, hash oil, etc.; onset of marijuana use).

Parental-Adolescent Relationships (PAR)—We assessed PAR at baseline using the Network of Relationships Inventory (NRI; Furman & Buhrmester, 1985). Participants were asked to indicate whom they consider to be their mother-figure (biological mother, step-mother (or father's significant other), other, no mother-figure, adopted) and father-figure (biological father, step-father (or mother's significant other), other, no father-figure, adopted). Questions on relationship factors were asked separately of the person indicated as the mother-figure and the person indicated as the father-figure. Three questions each assessed support (ex: "How often do you turn to this person for support with personal problems?"), criticism (ex: "How often does this person criticize you?"), companionship (ex: "How much free time do you spend with this person?"), conflict (ex: "How much do you and this person get upset with or mad at each other?"), and antagonism (ex: "How much do you and this person hassle or nag one another?"). Following earlier work (Abar et al., 2015), we collapsed these categories into assessments of *social support* (mean of support and companionship), and assessments of *negative interactions* (mean of criticism, conflict, and antagonism) (Furman & Buhrmester, 2009). Internal consistencies of these subscales were high (mother social support: α=85; father social support: α=.86; mother negative interactions: α.91; father negative interactions: α=91).

Analysis Strategy

We used discrete-time survival regression (Singer & Willett, 2003) to investigate whether parental relationships (mother social support, mother negative interactions, father social support, father negative interactions) and ethnicity predicted changes in age at onset of alcohol and marijuana use. Further, we investigated whether the interaction between ethnicity and parental relationships additionally predicted such changes. In these analyses, the proportional hazard of event occurrence, given that the event did not occur at the previous time point, is estimated based on the observed outcomes and predictors. Because there were no appropriate values to substitute missing cases for participants who did not indicate both a mother- and father-figure, cases with only one parent-figure were dropped from analyses at the survival regression stage (excluding 36 participants who did not report on a father-figure and 3 participants who did not report on a mother-figure).[1] For survival analyses, the final analytical sample after removing non-naïve participants and NRI incompletes was n=802 for age at onset of *full drink* (excluding 13 Hispanics and 57 Caucasians), and n=819 for age at onset of *marijuana use* (excluding 7 Hispanics and 47 Caucasians).

Following recommendations from Singer & Willet (2003), study onset data were re-coded into variables indicating whether onset had occurred at specific ages (coded by half-age, given the semi-annual assessment design), accounting for age differences at baseline. Data are represented such that so-called "time indicators", dichotomous variables whose values indicated the discrete time points, are used to predict all recorded onset and non-onset events. The probability of onset at a specific time point is then represented by the indicator

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[1]Compared to those who reported on two parents, those who reported on a single parent were less likely to experience early marijuana onset (No father-figure: HR = 0.12, p < .001, 95% CI: [0.06 – 0.23]; no mother-figure: HR = 0.10, p = .03, 95% CI: [0.01 – 0.78]). There were no differences in age of full drink onset between those who reported on a single parent and those who reported on two parents (no father-figure HR = 1.03, p = 91, 95% CI: [0.59 – 1.81]; no mother-figure: HR = 0.50, p = 50, 95% CI: [0.07 – 3.75]).

for that time point, conditional on the values for the predictors, assuming that onset did not occur at a previous time point. For the current study, we selected data from time intervals representing ages 12 to 18 (for full drink), and 11 to 18 (for marijuana use), on the basis that no new onset occurred in time periods outside that range, making modeling those ranges redundant. All analyses were conducted using SPSS 24 (IBM Corp., 2016) and Mplus version 7 (Muthen & Muthen, 2015)

Predictors of age of alcohol and marijuana use onset were entered in two steps. In Step 1, main effects of positive and negative PAR (social support and negative interactions) from both mother and father-figures were entered, along with adolescent gender and ethnicity (with Hispanics as the reference group). In Step 2, interactions were calculated as the product of ethnicity and each PAR score, such that these interactions represented the unique modification of the effect of parental interaction based on being Caucasian.

RESULTS

Table 1 describes sociodemographic characteristics of the sample. Compared with Caucasian participants, Hispanics scored significantly lower on social support from the father-figure ($t(876)= -2.56$, $p = .01$), but did not score significantly differently otherwise on age, gender, or parental relations. Table 2 compares the identification of mother- and father-figures among Hispanic and Caucasian members of the sample. Hispanics were significantly less likely than Caucasians to indicate a father-figure ($\chi^2(1, N = 916) = 6.49, p = .02$).

Results of the discrete-time survival analyses are presented in Table 3. In predicting onset of alcohol use, there was an overall effect of gender, such that girls had an earlier age of onset (HR =0.63, $p < .001$, 95% CI: [0.49 – 0.81]) as compared to boys. Negative interactions with the mother-figure increased risk for alcohol use onset (HR=1.32, p<.01, 95% CI: [1.10, 1.57]). Ethnicity moderated the effect of social support and negative interactions from the father-figure, and social support from the mother-figure. Among Hispanics, compared to Caucasians, greater social support from the father-figure lowered estimated age of full drink onset (Figure 1) – that is, initiation occurred earlier given greater social support from the father figure, but only for Hispanics - as did greater negative interactions with the father-figure (Figure 3). However, compared to Caucasians, greater social support from the mother-figure increased estimated age of full drink onset – that is, delayed initiation – for Hispanics (Figure 2).

In predicting onset of marijuana use, there was an overall threshold-level effect of ethnicity, such that Hispanics had an earlier age of onset (HR =0.68, $p= .06$, 95% CI: [0.46 ∓ 1.01]). Negative interactions with the mother-figure increased risk for marijuana use onset (HR=1.42, p<001, 95%CI: [1.16, 1.72]). Ethnicity moderated the effect of negative interactions with the father-figure, but did not moderate any other PAR variables. Similar to its effect on age of full drink onset, greater negative interactions with the father-figure lowered estimated age of marijuana use among Hispanics, compared to Caucasians (Figure 4).

Discussion

This study examined whether ethnicity moderated the effect of parental relationships on the onset of alcohol and marijuana use. We hypothesized that protective effects of positive parental relationship factors (for both paternal and maternal figures) would be stronger for Hispanics as compared to Caucasians. We also hypothesized that negative effects of parental relationship factors (for both paternal and maternal figures) would be reduced for Hispanics as compared to Caucasians. As expected, results indicate that maternal support resulted in *later* onset for alcohol, particularly for Hispanics when compared to Caucasians. However, we found that greater paternal support resulted in *earlier* alcohol onset for Hispanics. Results also suggest greater paternal negative interactions was associated with *earlier* onset of both alcohol and marijuana use, particularly for Hispanics.

In regards to specific maternal-adolescent interactions, greater social support from the Hispanic mother-figure was especially predictive against first full drink. This finding supports the general PAR literature that highlights the role of positive PAR on later onset (Cleveland et al., 2012; Jones et al., 2005; J. L. Kamon et al., 2006; Koning et al., 2012; Marsiglia, Nagoshi, Parsai, & Castro, 2014; Trucco et al., 2014). For example, Ozer, Flores, Tschann, and Pasch (2013) noted that positive maternal PAR (e.g., acceptance and support) was negatively associated with adolescent alcohol and marijuana use in a Mexican American sample (N=151). This finding also supports the Hispanic female gender role that highlights feminine virtues like support and moral strength for the wellbeing of the family that serve as a protective factor for Hispanic families (Castillo, Perez, Castillo, & Ghosheh, 2010). Future research may explore how this cultural construct is temporally associated with the positive aspects of PAR, their stability over time, and how these relationships in turn impact later adolescent alcohol and marijuana use and subsequent problems.

We found that social support from the Hispanic father-figure was risk-inducing rather than protective. This is inconsistent with the general PAR literature (Friedman, Ali, & McMurphy, 1998; Jordan & Lewis, 2005; Kafka & London, 1991; Stern, Northman, & Van Slyck, 1984; van der Zwaluw et al., 2008; van der Zwaluw et al., 2006), and warrants replication. Because our analyses did not account for the effects of specific cultural values, they do not provide insight into whether Hispanic cultural values play a role in this relationship. There may be circumstances for which the cultural values of Hispanic families have unintended negative consequences. For example, it is possible that a value such as *respeto*, while contributing positively to bonding between Hispanic fathers and adolescents, may also make it less likely for Hispanic adolescents to argue against alcohol offers from the father. However, this hypothesis is speculative, and more research is needed to both replicate this finding, and to extend it by explicitly including measures of cultural values. Future studies might also examine whether having explicit parental rules against adolescent drinking moderates this effect, such that social support from the father is only risk-inducing if the father/parents use alcohol and also permit their adolescent to use alcohol. Additionally, future studies can measure other parenting dimensions (e.g., alcohol monitoring, communicating consequences of alcohol use) as potential explanations.

The majority of our findings, however, support the overall PAR literature in that negative interactions, like parental conflict, increased *earlier* marijuana onset use among adolescents (Marsiglia, Kulis, Parsai, Villar, Garcia, 2009; Pasch, Deardorff, Tschann, Flores, Penilla, 2006). These results however were contrary to our hypothesis given that the effect had a greater impact on marijuana use onset among Hispanic adolescents than among Caucasian adolescents. Future research can investigate why the direction of the effect is observed as opposite to the maternal figure (albeit the latter is non-significant) and if cultural values or specific parenting styles plays a role in this opposite direction. However, although previous studies have explored the role of the father-figure (e.g., the absence of a father-figure, parental communication) on adolescent substance use (Friedman et al., 1998; Jordan & Lewis, 2005; Kafka & London, 1991; Stern et al., 1984), to our knowledge, this is one of the few studies that has directly compared the influence of positive and negative paternal PAR on Hispanic and Caucasian families and its impact on adolescent onset of use.

Strengths and Limitations

Our study of PAR among Caucasians and Hispanics had multiple strengths. One, we used a relatively large sample size. Two, the sample was prospectively assessed over a four-year period, allowing us to distinguish not just whether onset occurred, but whether timing of onset differed based on our predictors. Three, our outcomes covered two substances of central importance to adolescent substance use: alcohol and marijuana. However, our study also had limitations. Because our goal was to predict age of onset in substance-naïve adolescents, we had to exclude participants (10% of Hispanics and 7% of Caucasians for baseline alcohol use, 4% of Hispanics and 5% of Caucasians for baseline marijuana use) who were not substance-naïve at the time of recruitment. Therefore, the current analyses preclude prediction of the earliest, and potentially riskiest onset of substance use. Additionally, our prediction of age at onset only applied to adolescents who reported on two parents on the NRI.

Conclusion

It is crucial to continue to investigate ethnic and cultural factors that impact parenting and Hispanic family dynamics, with regard to adolescent alcohol and marijuana use. Additionally, this study highlights that Hispanic family dynamics are impacted by the father- and mother-figure. Therefore, incorporating parenting factors in substance use preventive programs contributes to targeting a public health concern in a culturally sensitive manner that is relevant to at-risk Hispanic adolescents.

Acknowledgments

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Highlights

- PAR had a larger influence on age of AOD onset for Hispanics than Caucasians.

- Support and negative interactions with Hispanics fathers predicted earlier alcohol onset.

- Social support from Hispanic mothers predicted later alcohol onset.

- Negative interactions with Hispanic fathers predicted earlier marijuana onset.

- PAR on AOD onset may be larger for Hispanics than for Caucasians.
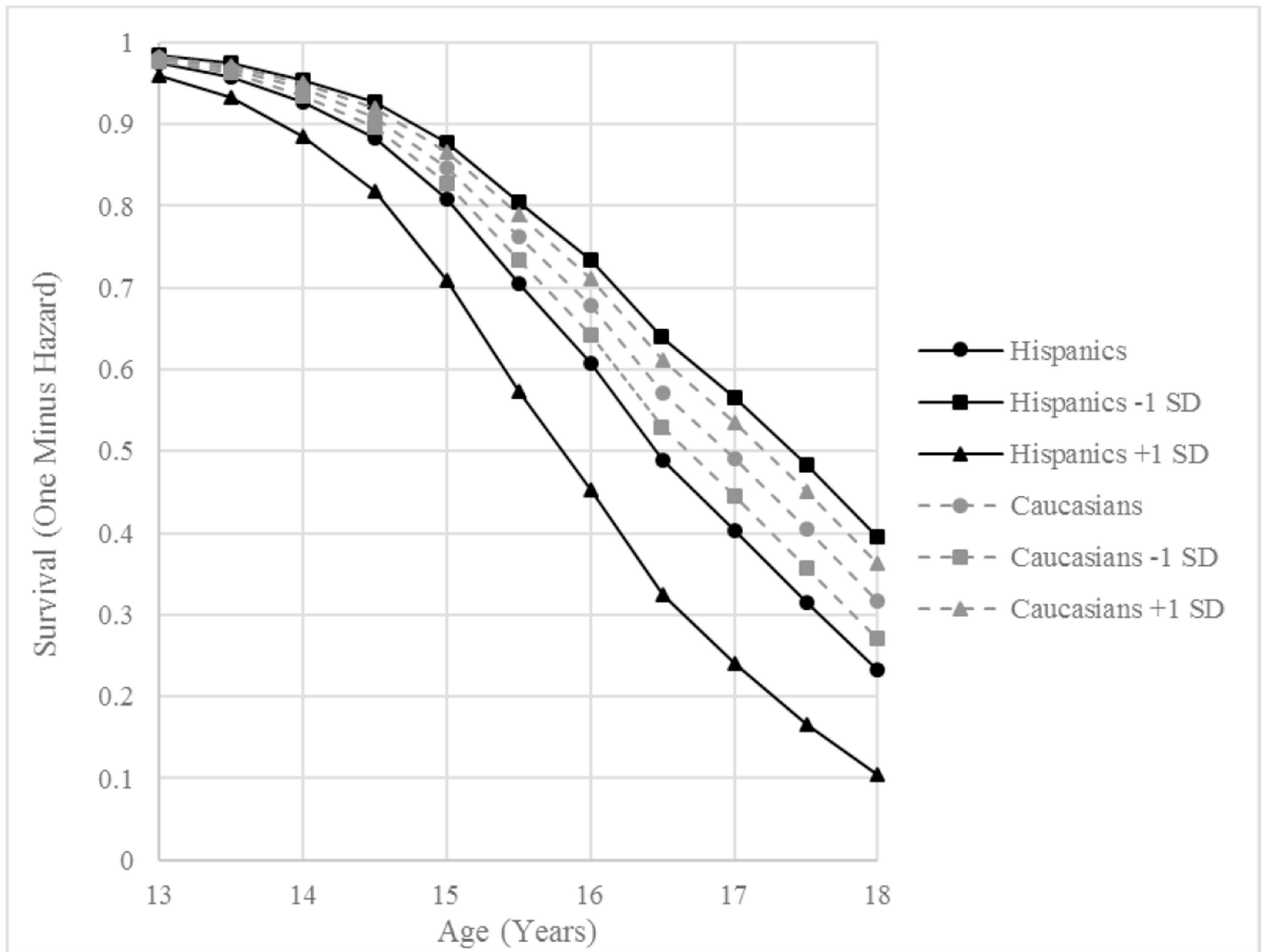
Figure 1.
Age of full drink onset for Hispanics and Caucasians with simple slopes for social support
from father-figure (N=802).

Note. +/− 1 refers to a single unit change in the value of social support from the father-
figure. The Y-axis denotes the cumulative probability of remaining alcohol-naïve at a given
age (X-axis), given that the participant was alcohol-naïve at the time of enrollment.
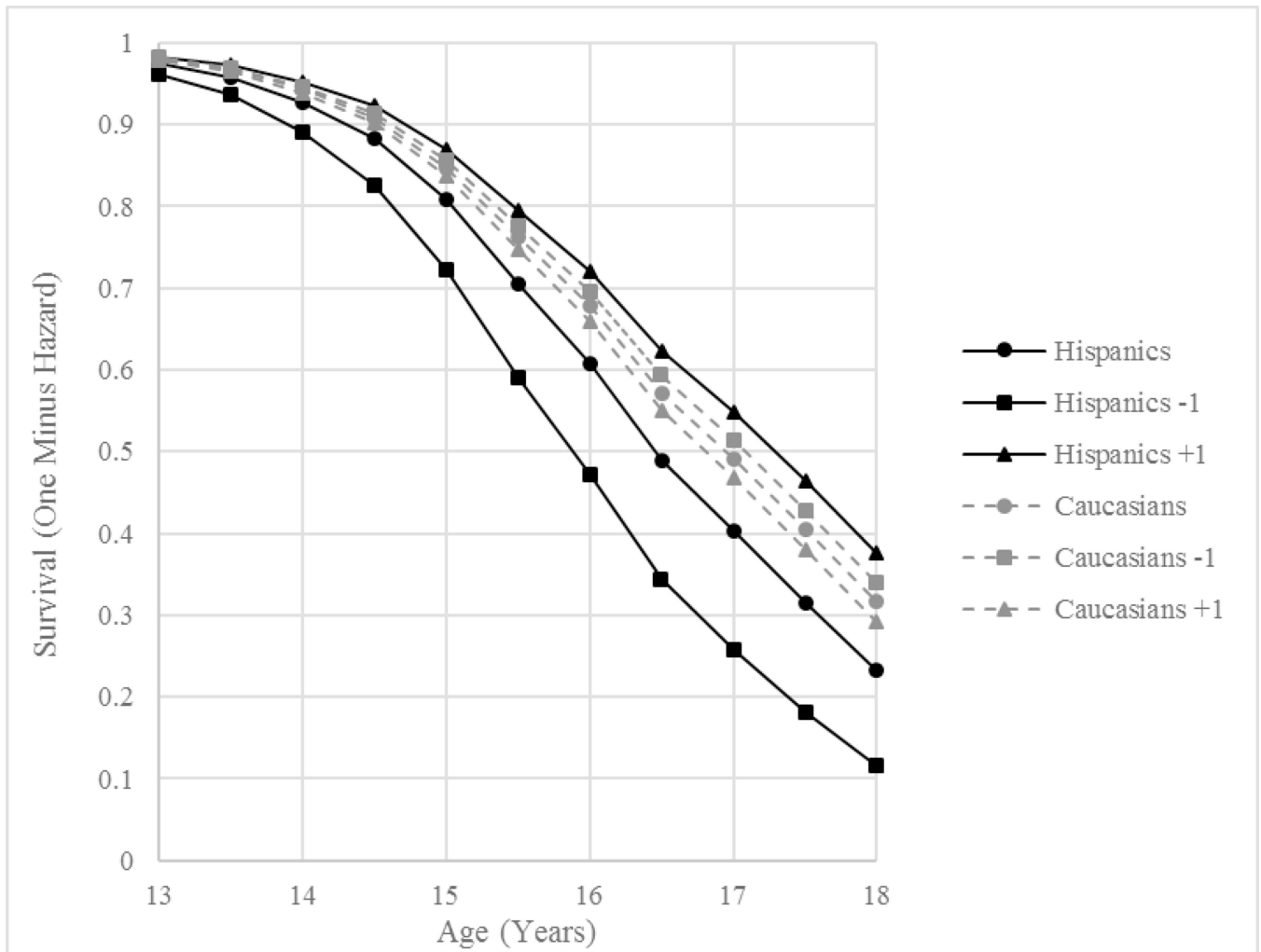
Figure 2.
Age of full drink onset for Hispanics and Caucasians with simple slopes for social support from mother-figure (N= 802).

Note. +/− 1 refers to a single unit change in the value of social support from the mother-figure. The Y-axis denotes the cumulative probability of remaining alcohol-naïve at a given age (X-axis), given that the participant was alcohol-naïve at the time of enrollment.
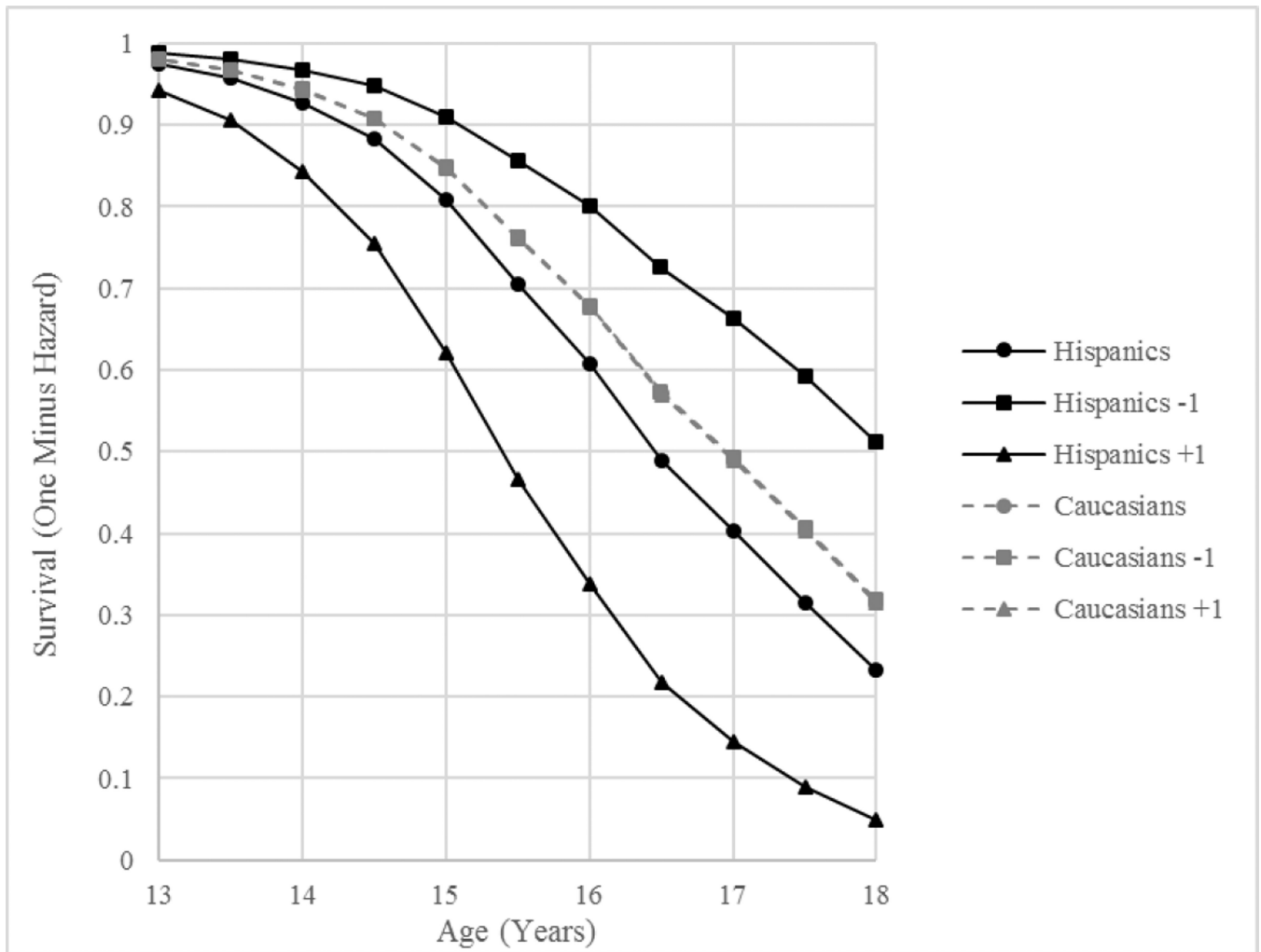
Figure 3.
Age of full drink onset for Hispanics and Caucasians with simple slopes for negative interactions with father-figure (N= 781).
Note: Because the effect of changes in negative interactions with father-figure are close to zero for Caucasians, the three lines overlap and appear as a single line. +/− 1 refers to a single unit change in the value of negative interactions with the father-figure. The Y-axis denotes the cumulative probability of remaining alcohol-naïve at a given age (X-axis), given that the participant was alcohol-naïve at the time of enrollment.
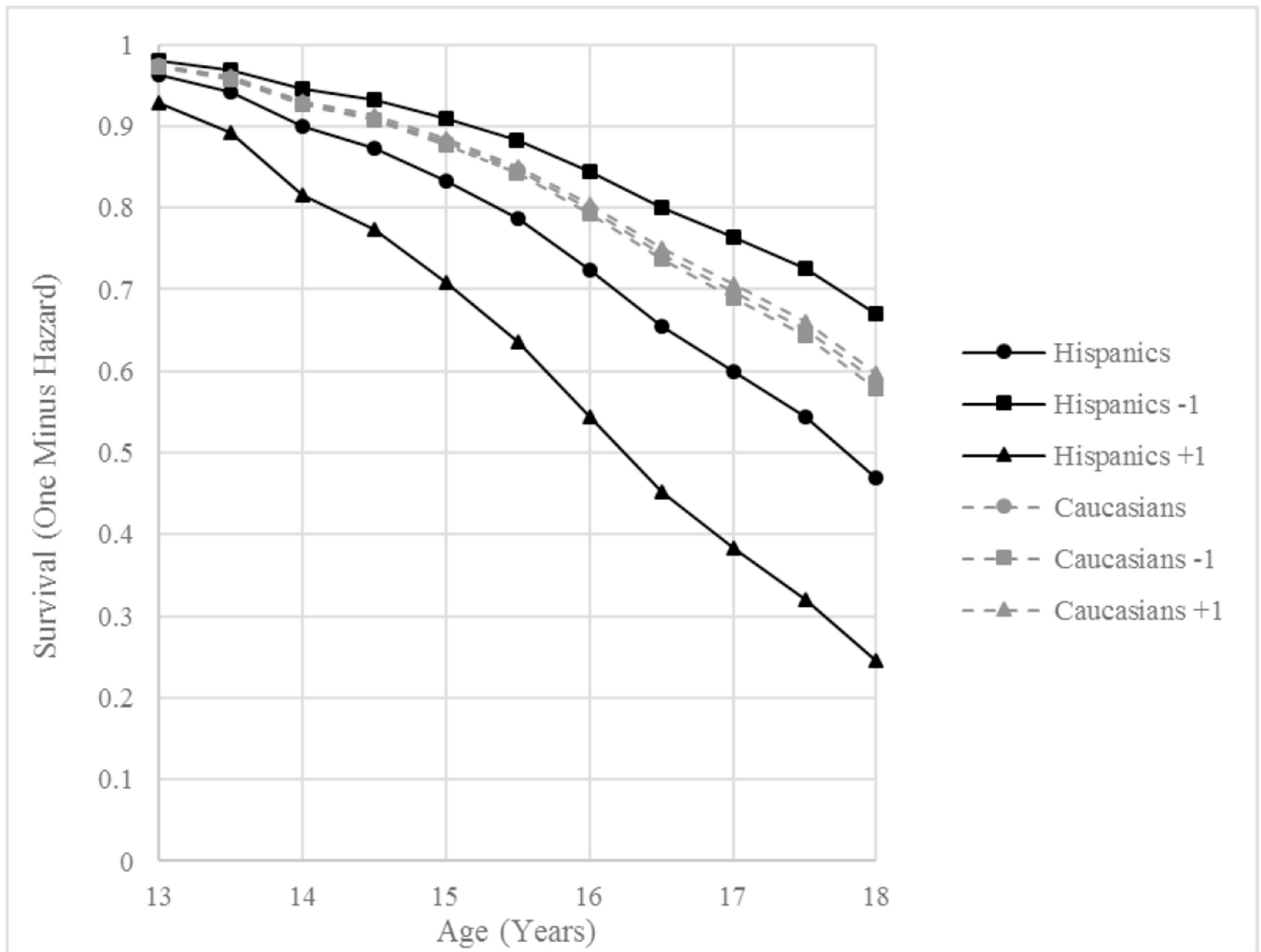
Figure 4.
Age of marijuana onset for Hispanics and Caucasians with simple slopes for negative interactions with father-figure (N=802).

Note: Because the effect of changes in negative interactions with father-figure are close to zero for Caucasians, the three lines overlap and appear as a near-single line. +/− 1 refers to a single unit change in the value of negative interactions with the father-figure. The Y-axis denotes the cumulative probability of remaining alcohol-naïve at a given age (X-axis), given that the participant was alcohol-naïve at the time of enrollment.

Table 1

Demographic characteristics, substance use onset, and parental relationship factors among Hispanic and Caucasian part icipants.

	Hispanics (n=124)			Caucasians (n=795)			
	M or %	SD	Range	M or %	SD	Range	P
Age at T1	12.3	0.9		12.5	0.9		n.s.
Female (%)	53			51			n.s.
Social Support Mom	2.98	1.06	[1–4]	3.05	0.94	[1–4]	n.s.
Social Support Dad	2.43	1.01	[1–4]	2.67	0.91	[1–4]	$p < .05$
Negative Interactions Mom	1.72	0.80	[1–4]	1.65	0.71	[1–4]	n.s.
Negative Interactions Dad	1.64	0.81	[1–3.67]	1.57	0.68	[1–4]	n.s.
	Onset at T1	Onset after 4 years		Onset at T1	Onset after 4 years		
Full drink of alcohol (n, %)	13, 10%	43, 47%		57, 7%	290, 46%		
Marijuana use (n, %)	7, 4%	32, 35%		47, 5%	192, 30%		

Note. Social Support and Negative Interactions are subscales of the Network of Relationships Inventory. Scores are calculated as the sum of three items on the Compassion and Support (sum: Social Support) and on the Conflict, Antagonism and Criticism (sum: Negative Interactions) subscales for each parent. Each item is scored on a scale of 1 (Little or none) to 5 (The most).

Table 2

Identification of Mother- and Father-Figures among Hispanics and Caucasians.

		Hispanic (n=124)		Caucasian (n=792)	
		N	%	N	%
Mother-figure	Biological	108	87.1	760	96.0
	Step-Mother	2	1.6	8	1.0
	Other	9	7.3	16	2.0
	Adopted	5	4.0	5	0.6
	None	0	0.0	3	0.4
Father-figure	Biological	84	67.7	692	87.4
	Step-Father	16	12.9	45	5.7
	Other	11	8.9	24	3.0
	Adopted	3	2.4	5	0.6
	None	10	8.1	26	3.3

Note. Those who indicated no father/mother-figure were excluded from substance use prediction analyses (n=39).

Table 3

Results of discrete-time survival regressions with age at onset as outcome.

		Full Drink (n = 802)				Marijuana Use (n = 819)			
		HR	p	95% CI		HR	p	95% CI	
Step 1	Gender (Male)	**0.63**	**<.001**	**0.49**	**0.81**	0.81	.16	0.60	1.09
	Ethnicity (Caucasian)	0.85	.39	0.59	1.23	**0.68**	**.06**	**0.46**	**1.01**
	Social Support - Mom	1.01	.80	0.85	1.20	1.02	.88	0.84	1.23
	Social Support - Dad	0.94	.50	0.80	1.12	0.90	.30	0.73	1.10
	Negative Interactions - Mom	**1.32**	**<.01**	**1.10**	**1.57**	**1.42**	**<.001**	**1.16**	**1.72**
	Negative Interactions - Dad	1.07	.48	0.88	1.32	1.08	.49	0.87	1.34
		LL (6, N = 802) = 16.6, p = .01				LL (6, N = 819) = 4.3, p = .64			
Step 2	Ethnicity * Social Support Mom	**1.66**	**>=.05**	**1.00**	**2.77**	0.93	.76	0.56	1.52
	Ethnicity * Social Support Dad	**0.53**	**<.05**	**0.32**	**0.89**	0.93	.79	0.56	1.55
	Ethnicity * Negative Interactions Mom	1.72	.08	0.93	3.18	1.70	.10	0.90	3.22
	Ethnicity * Negative Interactions Dad	**0.43**	**.01**	**0.22**	**0.85**	**0.50**	**.01**	**0.30**	**0.85**
		LL (4, N = 802) = 13.9, p < .05				LL (4, N = 819) = 4.0, p < .05			

Note. Results from discrete-time survival regression predicting age at onset for different substances, among those substance-naïve at baseline. Coefficients for covariates are omitted for clarity. Hispanics form the reference group for interactions.