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Contextual Amplification or Attenuation of Pubertal Timing Effects on Depressive Symptoms among Mexican American Girls

Rebecca M. B. White, PhD, MPH,
School of Social and Family Dynamics, Arizona State University

Julianna Deardorff, PhD, and
School of Public Health, University of California Berkeley

Nancy A. Gonzales, PhD
Department of Psychology, Arizona State University

Abstract

Purpose—To examine the role of neighborhood contextual variation in the putative association between pubertal timing and depressive symptoms among Mexican origin girls.

Method—Mexican origin girls ($N = 344$; $\bar{x}_{age} = 10.8$ years) self-reported their total pubertal, adrenal, and gonadal events, along with levels of depressive symptoms in the 5th grade. Girls' residential addresses were geocoded into neighborhoods and census data were obtained to describe neighborhoods along two dimensions: Hispanic cultural context and socioeconomic disadvantage. Two years later, when most of the girls were in the 7th grade, we re-assessed the girls with regards to depressive symptoms.

Results—Neighborhood Hispanic composition and neighborhood disadvantage were highly positively correlated. Using hierarchical linear modeling, we examined the moderating influence of neighborhood Hispanic composition and neighborhood disadvantage on the prospective associations between pubertal timing (total, gonadal, and adrenal) and depressive symptoms. Neighborhood Hispanic composition moderated the prospective association between total pubertal and gonadal timing and depressive symptoms. Neighborhood disadvantage did not moderate these associations.

Conclusions—Our results suggest that early maturing 5th grade Mexican origin girls living in non-Hispanic neighborhoods are at the greatest risk for increased depressive symptoms in the 7th grade, even though these neighborhoods tend to be socioeconomically more advantaged. The protective cultural context of largely Hispanic neighborhoods may outweigh the potential exacerbating effects of neighborhood disadvantage.

Adolescence is a critical period for the development of depressive disorders among girls. Over the developmental period ranging from childhood to adolescence girls begin to evince higher rates of depression than boys and population prevalence rates increase three-fold [1,

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Correspondence concerning this article should be addressed to Rebecca M. B. White, School Social & Family Dynamics, PO BOX 3701 Tempe, AZ 85287-3701, rebecca.white@asu.edu.

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2]. The Latino adolescent population, of whom Mexican Americans represent a large proportion [3], demonstrates high depression scores [4]; has been found to be twice as likely, compared to European American youths, to exhibit depressive symptomatology [5]; and displays similar gender patterns in the development of depression across adolescence [6]. Early puberty is a known epidemiological risk factor for depressive problems among adolescent-aged girls [7, 8]. Mexican American girls, on average, experience puberty (e.g., onset of breast development, menarche) earlier than their European American counterparts [8, 9]. However, the effects of pubertal development are hardly universal and not all girls experience the negative sequelae associated with early pubertal timing. Neighborhoods are critical contexts for adolescent development generally [10] and pubertal development specifically [11, 12] that may help to explain variation in outcomes among early developing Mexican American girls.

Investigations of puberty and depression, which have often excluded Latinas, have generally supported a developmental readiness hypothesis [2, 13]. This hypothesis suggests asynchrony between different developmental domains leaves early-maturing girls ill-prepared to cope with the normative developmental challenge of transitioning from childhood to adolescence [14]. Pubertal development is associated with many different kinds of changes, including biological and social ones. Biologically, negative affect may spike as the endocrine system enters gonadarche [1, 15, 16] and hormonal changes associated with both gonadal and adrenal maturation may interact with the social contexts in which they occur [8]. Socially, puberty may impact adolescent girls' depressive symptoms via reactions of others to advancing development and the changes in expectations members of the community have for the developing girl. According to the developmental readiness hypothesis, early maturing girls have fewer cognitive, social, and emotional resources than their later-maturing peers for grappling with such changes [7].

Though some work with Latinas and Mexican Americans has replicated the developmental readiness hypothesis, there is considerable variability. Hayward et al. [17] found that early timing was associated with depression among European American girls, but not Latinas. Siegel et al. [18] found that Latinas were more susceptible to the negative effects of early timing when compared to adolescents from other racial/ethnic groups. Others show that early timing among U.S. Latinas and African Americans is risky for depressive problems [19]. However, the studies on Latinas largely ignore neighborhood context, despite the fact that neighborhoods represent critical sources of culture and quality variability [20] for Mexican Americans that may exacerbate or attenuate the association between pubertal development and depressive symptoms [14].

According to contemporary contextual theory, the developmental consequences of early maturation should vary with contextual circumstances [7, 21]. Poor neighborhood quality (i.e., degree of structural disadvantage) has been conceptualized as a source of stress for residents [22], and for adolescent girls the added stress of living in disadvantaged neighborhoods has been found to exacerbate the early timing risk [11, 23]. However, neighborhoods can also be sources of support for Mexican American adolescents [24]. Living in an ethnic enclave, where there is increased similarity in residents' values and expectations [25, 26], may provide early maturing girls with additional psychosocial resources not available to their counterparts living outside of those enclaves. Further, early maturation is influenced by local maturation norms [27], so Mexican origin girls (who, on average mature earlier) may find early maturation even more problematic in non-Mexican/Hispanic contexts. Nevertheless, neighborhood Hispanic ethnic homogeneity is often positively correlated with census indicators of disadvantage, and previous studies have met with difficulty in disentangling ethnic differences from contextual socioeconomic differences [14]. Thus, it is difficult to predict whether the potential social advantages of an

ethnic enclave will be a stronger or weaker force than the additive stress of living in low-quality neighborhoods. Given the stronger collectivist orientation found among Mexican Americans [28], the former may be a more salient feature of neighborhoods for this group.

The present investigation examined the roles that diverse neighborhood characteristics play in prospective links between early pubertal timing and depressive symptoms in a large, socioeconomically diverse sample of Mexican origin girls first assessed in the 5th grade. To advance understanding of the ways contextual circumstances may moderate the putative association between early timing and depressive symptoms, we examined three main issues: (a) whether, on average, pubertal timing at baseline positively influenced depressive symptoms two years later among Mexican origin girls, (b) whether pubertal timing specific to gonadarche and adrenarche predicted depressive symptom scores, and (c) whether neighborhood disadvantage and neighborhood cultural context (Hispanic composition) moderated the prospective effects of timing on depressive symptoms. We hypothesized that neighborhood disadvantage would exacerbate, and neighborhood Hispanic composition would attenuate the early timing-depressive symptoms link.

Method

Participants and Procedures

Data for the current study come from the first and second waves of a longitudinal study focused on Mexican origin adolescents and their families. All study procedures were approved by the University's Institutional Review Board; details regarding the full sample and procedures are provided elsewhere [29]. Participants were recruited when they were students in the 5th grade (beginning Fall 2004). Spanish and English recruitment materials were sent home with 5th grade students in selected schools explaining the project and asking parents to indicate interest in the study. Interested families were screened for eligibility according to the following criteria: (a) they had a target 5th grader attending a sampled school; (b) the participating mother was the child's biological mother, lived with the child, and was of Mexican origin; (c) the child's biological father was of Mexican origin; (d) the target child was not learning disabled; and (e) no stepfather or mother's boyfriend was living with the child. In-home computer assisted personal interviews were completed with 73% ($N = 749$) of eligible families. Interviewers read each survey question and possible response aloud in participants' preferred language. Families were re-interviewed at follow-up, approximately two years after baseline data collection. A total of 710 families (95%) participated at follow-up. Families who participated at Time 2 were compared to families who did not on several baseline demographic variables; no differences emerged on child characteristics (i.e., gender, age, generational status, language of interview), mother characteristics (i.e., marital status, age, generational status), or father characteristics (i.e., age, generational status). Families were paid \$45 (T1) and \$50 (T2) per participating family member. Informed consent (parents) and assent (target children) were obtained during the baseline visit. The current study focuses on the subset of the sample of families with a female participating child ($n = 365$) who had complete data for the first two waves of data collection ($n = 342$). Most (98%) of the girls were 10 or 11 years old at T1. The final sample is described in Table 1.

Measures

Pubertal timing was assessed at baseline using girls' reports on the Pubertal Development Scale (PDS), a widely used non-invasive measure with established reliability and validity[30]. On a scale ranging from 1 (*no*) to 4 (*changes/growth seem complete*), girls indicated whether they had experienced pubertal growth in several domains. To offer a comparison to previous work [12, 23] we scored the PDS traditionally by computing a mean

score for all the items. Recognizing more recent work demonstrating the nuanced ways in which gonadal and adrenal events may interact with psychosocial processes to impact girls' depression [31], we capitalized on recent psychometric work [32] and scored adrenal (e.g., body hair, skin changes) and gonadal (e.g., growth spurt, breast development, menarche) events separately. Consistent with prior work [24], PDS scores were standardized within each age (in years) to create a variable that assessed timing. This approach generated a timing variable with mean of 0 and standard deviation of 1; higher scores indicated earlier maturation (compared to same-age peers). Girls with age-adjusted PDS scores greater than or equal to 1 are described as early maturers [12, 23]. In the current study 15.8%, 12.9%, and 15.2% of girls were considered early for total puberty, adrenarche, and gonadarche, respectively.¹ Internal consistency α was .70.

Neighborhood context was assessed at baseline along two dimensions: quality and culture. Neighborhood disadvantage was used to operationalize neighborhood quality. Neighborhood Hispanic composition was used to assess the Hispanic cultural context of neighborhoods. To provide the most direct comparison to previous work on contextual modification [11, 12, 23] and build upon factor analytic work demonstrating reliability and validity of census-based indicators of neighborhood disadvantage [33], we assessed disadvantage using 2000 tract-level census data: for each neighborhood the percent of (a) families below the poverty level, (b) the population 16 years and over in the labor force who were unemployed, (c) female-headed households, and (d) households on public assistance were standardized and summed to indicate the level of disadvantage in the neighborhood. Internal consistency α was .86. We assessed neighborhood Hispanic composition using 2000 tract-level census estimates of the percentage of the population that identified as Hispanic in each neighborhood.

Several *demographic variables* were included as controls. Recognizing nativity and income differences in neighborhood residence [10] and depression problems [5] we controlled for child nativity (*In what country was [target child] born?*, 1 = Mexico) and income (mothers estimated past year family income on a scale ranging from 1 = less than or equal to \$5,000 to 20 = \$95,001+). Finally, recognizing the importance of advancing age [34] we controlled for differences in age, in years.

Depressive symptoms were assessed at baseline and follow-up using depression symptom counts from the computerized version of the Diagnostic Interview Schedule for Children [35]. The DISC has been successfully translated into Spanish, and adequate reliability and validity have been reported for use with Mexican Americans [36]. Both the target child and the target child's mother were independently administered the DISC. We ran all models with youth report on depressive symptoms. For descriptive purposes, according to the DISC, 3% and 2% of youth were considered clinically depressed at baseline and T2, respectively.

Statistical analyses

Data were analyzed using SAS Proc Mixed (SAS Institute, Cary, NC). We used hierarchical linear modeling to estimate the moderating role of baseline neighborhood context on the association between baseline pubertal timing and follow-up depressive symptoms, adjusting for age, family income, nativity, and baseline depressive symptoms. Degrees of freedom were calculated using the Satterthwaite method [37]. To obtain the proper slope parameters needed to estimate a cross-level interaction, we centered all person-level variables within neighborhood and all neighborhood-level variables at the grand mean [38]. The impact of

¹Because data were collected on a young sample of ethnic-homogenous girls at the beginning of the pubertal transition, some literature suggests that pubertal status could be considered an indicator of earlier pubertal timing [12, 24]. Therefore, we replicated all analyses with raw (not standardized within age) PDS scores, to offer a comparison to those readers interested in the broader body of literature on timing and status.

pubertal timing, adrenal timing, and gonadal timing were examined separately, as were the moderating roles of neighborhood disadvantage and Hispanic composition. All significant ($\alpha < .05$) cross-level interactions were probed using simple slopes analysis[39].

Results

Table 2 provides zero-order correlations for all person-level study variables. Pubertal timing, gonadal timing, and adrenal timing at baseline were positively correlated with T2 depressive symptoms. At the neighborhood level ($N = 113$), Hispanic composition and disadvantage were highly correlated, $r = .69$ ($p < .01$). Model results are presented for gonadal timing, adrenal timing, and total timing, respectively. Within in each section we discuss (a) whether, on average, baseline timing prospectively influenced depressive symptoms (i.e., a main effect for timing) and (b) whether neighborhood context moderated the degree to which timing predicted depressive symptoms (i.e., a timing by context interaction).

Adjusting for model covariates (i.e., baseline depressive symptoms, nativity, family income, and age), there was no main effect for baseline gonadal timing on T2 depressive symptoms (Table 3). Rather, the impact of baseline gonadal timing on T2 depressive symptoms was moderated by neighborhood Hispanic composition. Simple slopes for the interaction are presented in Figure 1. There was no relation between gonadal timing and depressive symptoms in highly Hispanic neighborhoods ($\gamma = -0.44$, $SE = 0.35$, *ns*). In neighborhoods low on Hispanic composition, the association was positive ($\gamma = 1.26$, $SE = 0.40$, $p < .01$). The interaction effect for neighborhood disadvantage was not significant.

Adjusting for model covariates, there was no main effect for baseline adrenal timing on T2 depressive symptoms (Table 3). Neighborhood disadvantage and Hispanic composition did not interact with adrenal timing to predict depressive symptoms over time.

Adjusting for model covariates, there was no main effect for baseline total pubertal timing on T2 depressive symptoms (Table 3). Rather, the impact of baseline pubertal timing on T2 depressive symptoms was moderated by neighborhood Hispanic composition. Simple slopes for the interaction replicate the pattern of results shown in Figure 1. There was no relation between pubertal timing and depressive symptoms in highly Hispanic neighborhoods ($\gamma = -0.36$, $SE = 0.35$, *ns*). In neighborhoods low on Hispanic composition, the association was positive ($\gamma = 1.03$, $SE = 0.39$, $p < .01$). The interaction effect for neighborhood disadvantage was not significant.

To rule-out common method variance as an explanation for study findings, we re-ran all hierarchical linear models using parent-report on youth depressive symptoms. The pattern of results in the parent-report models was identical to those results presented here. Further, to offer a comparison to prior work that has examined the impact of pubertal status on depressive symptoms among a young sample of ethnic-homogenous girls at the beginning of the pubertal transition [12, 23], we replicated analyses with raw (not standardized within age) PDS total, adrenal, and gonadal scores. The results when raw scores were used were identical to the ones presented here.²

Discussion

This is the first study to examine the moderating influence of neighborhood context on the prospective association of early pubertal timing with female adolescents' depressive symptoms. The study employed a diverse sample of young Mexican origin girls at the

²Tables presenting results for both analytical replications are available from the first author.

beginning of the pubertal transition; controlled for differences in nativity, age, and family income; examined these associations using three indicators of pubertal timing; and replicated all findings when parent reports on girls' depressive symptoms were used. Consistent with theory [14], our findings indicate that the impacts of 5th grade pubertal timing on girls' depressive symptoms two years later depend upon characteristics of the neighborhoods in which girls live. Consistent with study hypotheses, living in highly Hispanic neighborhoods was generally protective for Mexican origin girls. Early pubertal timing in the 5th grade was associated with increased levels of depressive symptoms in the 7th grade, but only for those girls that lived in non-Hispanic neighborhoods. Further, these moderating effects evidenced when both gonadal timing and total pubertal timing were measured.

In addition to examining moderation by neighborhood Hispanic composition, we examined the moderating effect of neighborhood quality, operationalized as socioeconomic disadvantage. Not surprisingly, neighborhood disadvantage and Hispanic composition were highly, positively correlated. Neighborhood disadvantage did not moderate the prospective relation between pubertal timing and depressive symptoms. Prior work, not focused on Mexican Americans, suggests that low quality neighborhoods amplify the risk for externalizing problems for early developing girls [11, 23]. In the current study, where the focus was on depressive problems among Mexican Americans, we found that the degree of disadvantage did not amplify pubertal timing effects on depressive symptoms. Importantly, those neighborhoods that were highly disadvantaged also tended to be highly Hispanic. Thus, our results suggest that the protective effects of high Hispanic composition for the early puberty-depression association may outweigh putative negative effects of living in a socioeconomically disadvantaged neighborhood for Mexican origin girls. Qualitative work in disadvantaged neighborhoods with high and low adolescent Latina birthrates showed that those neighborhoods with lower than expected Latina adolescent birthrates could best be described as ethnic enclaves. In these enclaves community members had stronger commitments to family and community; more positive views of adolescents; and more control, monitoring and protection of girls [26]. The same mechanisms may be protecting Mexican American girls in highly Hispanic neighborhoods from the negative sequelae associated with earlier pubertal development. Whether neighborhood Hispanic composition is protective for other aspects of adolescent adjustment among Mexican American girls, like externalizing spectrum problems, is a topic deserving of future investigation.

The developmental readiness hypothesis offers several explanations for our current findings, all of which merit closer investigation. Socially, puberty may impact adolescent girls' depressive symptoms via reactions of others to advancing development and the changes in expectations members of the community have for the developing girl. The changes in expectations communities have for developing girls have generally been found to be more stressful for early maturers [2]. But, in highly Hispanic neighborhoods there may be protective socio-cultural processes enacted to support these girls. Prior work has shown that neighborhoods characterized by higher levels of Mexican American cultural values offered a protective developmental niche for adolescent adjustment [24], and members of neighborhoods characterized by uniformly high, shared cultural values may react differently to or have different expectations of pubertal maturation than members of non-Hispanic communities [26]. Psychologically, the developmental readiness hypothesis suggests that early developing girls have fewer cognitive, social, and emotional resources than their later-maturing peers for grappling with pubertal changes [7]. Perhaps the shared values in highly Hispanic neighborhoods [24] buffer the impact of these decreased resources, in effect providing community social support resources [26] even when and if personal cognitive, social, and emotional resources for dealing with the changes are low. Finally, given noted differences in age at onset of breast development and menarche between Mexican American

girls and European American girls [8, 9] and previous research on the contextual relevance of defining early maturation [27], Mexican origin girls living in non-Hispanic, predominantly white neighborhoods may experience the greatest risk because, relative to averages in those neighborhoods, they are even earlier.

Across both youth and parent reports on girls' depressive symptoms, the protective effects of Hispanic composition on the association between timing and depressive symptoms replicated for gonadal timing and total timing, but were not evident for adrenal timing. Negative affect may spike as the endocrine system enters gonadarche [7, 15] and this spike appeared to be stronger for Mexican origin girls living in non-Hispanic neighborhoods. Certain gonadal events (e.g., breast development with accompanying gains in height and weight) may be some of the more publicly observable indicators of sexual maturation for girls [8], in which case neighborhood residents and the collective social/cultural processes in which they participate [25], may be specifically activated in response to those visual cues [31]. It is important to recognize, however, that a smaller proportion of girls in the current study were considered early for adrenal timing. As girls continue to mature, and more variation is observed in adrenal timing, researchers may want to continue more intensive investigations of the combined influences of psychosocial, gonadal, and adrenal processes on adjustment [31], including investigation of other social contextual variables that may interact specifically with adrenal maturation to predict changes in depression [8].

Notable strengths of this study include the prospective design; the socioeconomically diverse, yet ethnic homogenous sample; the independent treatment of adrenal and gonadal timing; the multiple operationalizations of neighborhood context; and replication of major study findings across both parent and youth reports on youth depressive symptoms. The study also has limitations. First, we assessed pubertal timing using the PDS in the 5th grade. The baseline assessment of puberty represents just one snapshot in time; some girls in our sample may have entered puberty shortly afterward, while others may have entered puberty years prior to the first assessment. Second, a clinical exam was not feasible with this community-based sample. Though the PDS is a widely used non-invasive measure with established reliability and validity [30], it is nonetheless a subjectively reported measure of pubertal events and therefore less accurate than physician assessment. Finally, because boys tend to develop later than girls and evidence is more mixed regarding timing-related risks for depression among boys [14], we excluded boys from the current study. An examination of cultural-contextual attenuation or exacerbation of pubertal timing effects on Mexican American boys' depressive symptoms using a sample with a less restricted age-range is clearly warranted.

Our results supported contemporary contextual theory [7, 21], in that the developmental consequences of early maturation varied with contextual circumstances. Further, our results suggest there may be important cultural dimensions of neighborhoods that outweigh putative negative factors like disadvantage. This is an important message for researchers, who may need to develop ways to disentangle the effects of neighborhood disadvantage and Hispanic composition to better understand depressive symptomatology among early maturing Mexican American girls. Efforts focused on supporting traditional cultural strengths in low-income Mexican American communities may be a way to reduce depression risk for early developing girls. For practitioners, these findings highlight the importance of assessing aspects of girls' cultural and contextual circumstances through the pubertal transition to inform depression risk assessment and promote positive adaptation. Ultimately, understanding the specific mechanisms employed in these neighborhoods to protect early-developing Mexican origin girls from related negative sequelae can contribute to the development of culturally sensitive intervention strategies for Mexican American families. Replication and explanation of the protective effects of Hispanic communities also can

advance our understanding of the role of culture in shaping sexual maturation and depression risk during adolescence.

Implications and Contribution Summary Statement

The current study supports contemporary theoretical views of pubertal development and suggests that the impact early pubertal timing has on depressive symptoms among Mexican American girls depends upon the social context in which the associated developmental changes occur. Early pubertal timing may be problematic in certain contexts, not in others.

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Figure 1.

Simple slopes plot for the association between baseline gonadal timing and time 2 depressive symptom counts at low, mean, and high levels of neighborhood Hispanic composition.

Note: *Gonadal timing low* corresponds to 1 *SD* below the sample mean on timing; *gonadal timing high* corresponds to 1 *SD* above the sample mean on timing (i.e., early). * indicates the slope is statistically different from zero ($p < .05$).

Table 1

Descriptive statistics for the sample of Mexican American girls ($N = 342$) and neighborhoods ($N = 113$) at baseline

	%	Range	Mean	SD
Person-Level Variables				
Depressive symptoms (T1)		0 – 17	4.25	4.11
Total PDS score		1.0 – 4.0	1.78	0.59
Total pubertal timing		–1.5 – 4.1	0.00	1.00
Adrenal timing		–1.5 – 2.5	0.00	1.00
Gonadal timing		–1.2 – 3.0	0.00	1.00
Family income (in \$5,000)		1–20	6.73	4.30
Age (years)		9–12	10.38	0.53
Reported menarche	12.9			
Born in the US	73.4			
Interviewed in English	82.9			
Neighborhood-Level Variables				
Disadvantage		– 4.9 – 17.5	0.28	3.64
Hispanic composition (%)		5.6 – 90.7	49.08	25.31

Note: PDS = pubertal development scale. T1 = baseline. For total pubertal/adrenal/gonadal timing early timing is characterized by scores ≤ -1 . Neighborhood disadvantage is a summed composite of 4 standardized (mean = 0, $SD = 1$) scores from the 2000 Census [% of families below the poverty level, % of the population 16 years and over in the labor force who were unemployed, % of female-headed households, and % households on public assistance]; as such, the mean and range are not directly interpretable.

Table 2Bivariate Correlations among all Continuous Person-Level Study Variables ($N = 342$)

Measures	1	2	3	4	5	6	7
1. Depressive Sx (T1)	1.00						
2. Depressive Sx (T2)	.37***	1.00					
3. Total timing	.23***	.24***	1.00				
4. Adrenal timing	.16**	.20***	.79***	1.00			
5. Gonadal timing	.16***	.15***	.83***	.49***	1.00		
6. Annual income	-.01	.01	-.02	-.01	-.02	1.00	
7. Age	.10	.13*	.00	.00	.00	.02	1.00

Note: Sx = symptoms, T1 = baseline 1; T2 = time 2.

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

Table 3

Unstandardized hierarchical linear model regression coefficients predicting Mexican American girls' depressive symptoms ($N = 342$)

	Total Puberty Models	Gonadal Models	Adrenal Models
	Coefficient (SE)	Coefficient (SE)	Coefficient (SE)
<i>Moderation by Neighborhood Disadvantage</i>			
Level 1 (CWC)			
Intercept	4.16 (0.21) **	4.16 (0.21) **	4.16 (0.21) **
Depressive symptoms	0.34 (0.06) **	0.34 (0.06) **	0.34 (0.06) **
Nativity	-0.24 (0.60)	-0.30 (0.51)	-0.25 (0.61)
Family Income	-0.01 (0.07)	-0.01 (0.07)	-0.01 (0.07)
Age	0.59 (0.51)	0.57 (0.50)	0.61 (0.50)
Timing	0.24 (0.25)	0.31 (0.25)	0.22 (0.26)
Level 2 (CGM)			
Neighborhood Disadvantage	-0.12 (0.07)	-0.12 (0.06)	-0.12 (0.06)
Cross-level interaction			
Timing X Disadvantage	-0.08 (0.10)	-0.10 (0.09)	-0.02 (0.08)
<i>Moderation by Neighborhood Hispanic Composition</i>			
Level 1 (CWC)			
Intercept	4.16 (0.21) **	4.16 (0.21) **	4.16 (0.21) **
Depressive symptoms	0.34 (0.06) **	0.33 (0.06) **	0.34 (0.06) **
Nativity	-0.33 (0.60)	-0.35 (0.59)	-0.25 (0.61)
Family Income	-0.01 (0.07)	-0.01 (0.07)	-0.01 (0.07)
Age	0.54 (0.50)	0.49 (0.49)	0.61 (0.50)
Timing	0.34 (0.25)	0.41 (0.25)	0.22 (0.26)
Level 2 (CGM)			
Hispanic composition	-0.01 (0.01)	-0.01 (0.01)	-0.12 (0.06)
Cross-level interaction			
Timing X Hispanic	-0.03 (0.01) *	-0.04 (0.01) **	-0.02 (0.01)

Note. *SE* = Standard error. CWC = centered within cluster. CGM = centered at the grand mean. All independent variables were assessed at Time 1. The dependent variable was assessed at Time 2.

* $p < .05$,

** $p < .01$.