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Unsupervised Self-Care Predicts Conduct Problems: The Moderating Roles of Hostile Aggression and Gender

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Abstract

Despite widespread speculation about the detrimental effect of unsupervised self-care on adolescent outcomes, little is known about which children are particularly prone to problem behaviors when left at home without adult supervision. The present research used data from a longitudinal study of 674 Mexican-origin children residing in the United States to examine the prospective effect of unsupervised self-care on conduct problems, and the moderating roles of hostile aggression and gender. Results showed that unsupervised self-care was related to increases over time in conduct problems such as lying, stealing, and bullying. However, unsupervised self-care only led to conduct problems for boys and for children with an aggressive temperament. The main and interactive effects held for both mother-reported and observational-rated hostile aggression and after controlling for potential confounds.

Keywords

self-care; hostile aggression; conduct problems; latchkey; temperament

During the transition from childhood to adolescence, youth undergo many changes. They begin to take on different roles not only within the home, but also in school and social settings, where they gain more autonomy and begin to interact within larger social networks outside the family. During this developmental transition, youth are often afforded more independence and greater freedom to choose how and with whom to spend their time. These choices often prove highly consequential as the youth navigate their adolescent years, with some launched on trajectories of problem behaviors and others on more prosocial pathways.

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One particularly critical developmental context is how youth transitioning into adolescence spend their time outside of school (Mahoney, Vandell, Simpkins, & Zarrett, 2009; Mahoney & Parente, 2009). Many youth spend their after-school time under the supervision of their parents or in structured activities that are supervised by adults such as intramural sports, school clubs, and community programs. The benefits of structured after-school activities are well-established from previous research (American Youth Policy Forum, 2006; Durlak & Weissberg, 2007; Lauer et al., 2006; Posner & Vandell, 1994; Riggs & Greenberg, 2004). In contrast, other youth engage in unstructured activities that lack adult supervision, such as spending time in unsupervised self-care with siblings, peers, or alone at home (i.e., latchkey kids). Eleven percent of children aged 5–14, who live with their mother, are in unsupervised self-care, at an average rate of 6.5 hours per week (Laughlin, 2013). Of these children, 4.7% of elementary-aged children (5–11 years) and 26.9% of middle-school aged children (12–14 years) spend time in self-care.

Despite its prevalence, there is a paucity of empirical research on the developmental consequences of youth caring for themselves without adult supervision. The few extant studies provide conflicting findings, with some studies showing it can be developmentally enriching (Garbarino, 1981; Stroman & Duff, 1982) and others showing it is associated with a broad range of problems including antisocial behavior (Posner & Vandell, 1994; Steinberg, 1986), risk-taking behavior (Dwyer et al., 1990; Cohen et al. 2002), substance use (Mott et al., 1999; Richardson et al., 1993), and poor psychological adjustment (Pettit et al., 1997). However, the factors that determine whether unsupervised self-care leads to enriching or adverse outcomes are poorly understood.

A core theoretical concept in many theories of adolescent development is that behavior is shaped by a dynamic interaction between environmental conditions and individual characteristics that are mutually influential over time (e.g., Conger & Donnellan, 2007; Magnusson & Stattin 1998; Sameroff, 2010). Similarly, researchers have long noted that the autonomy afforded by unsupervised self-care could be good, neutral, or bad for children, depending on the context and characteristics of the child (Galambos & Dixon, 1984; Stewart, 1981). A few studies have examined the role of contextual factors, including the environment of sibling care in a nationally-representative sample (Greene, Hynes, & Doyle, 2011) and self-care within and outside the home (Coley, Morris, & Hernandez, 2004). However, little research has attended to the temperamental traits that children bring to the situation. Whether unsupervised self-care is an opportunity for increased responsibility, self-reliance, and independence on the one hand, or increased delinquency, alcohol and tobacco use, and peer orientation on the other hand, may depend largely on the child's temperament.

Temperament refers to "constitutionally based individual differences in reactivity and self-regulation" (Rothbart, 2011). Reactivity is conceptualized in terms of affective and motivational processes to stimuli, whereas self-regulation refers to individual differences in top-down control of reactive processes. Children with a hostile aggressive temperament, for example, will perceive and react differently to unstructured, novel, or threatening situations than those with a less hostile aggressive temperament. In the present context, we expect that unsupervised self-care and hostile aggression will independently predict higher levels of antisocial behavior, but of particular importance, we expect that the co-occurrence of these

two risk factors will have interactive effects above and beyond their additive effects. Consistent with this possibility, unsupervised children at greatest risk are those who are already prone to problem behavior, though these results are based on longitudinal studies with a limited time span (two assessments 16 months apart) or a primarily European-American sample (Coley, Morris, & Hernandez, 2004; Pettit, Bates, Dodge, & Meece, 1999). This suggests that hostile aggressive youth may be more likely to exhibit conduct problems in self-care situations, which then leads to even more problem behavior later in development. However, children without a hostile aggressive temperament may take advantage of self-care situations in more adaptive ways, which then diminishes their risk for engaging in problem behaviors.

Another factor that may moderate the effect of self-care on conduct problems is the child's gender. We expect the effects of self-care to differ for boys and girls for several reasons. First, there is a difference in dosage, or amount of time in self-care. Parents are more likely to leave boys in unsupervised self-care than girls for longer periods of time (Lovko & Ullman, 1989; Messer, Wuensch, & Diamond, 1989; Mulhall, Stone, & Stone, 1996; Pettit, Bates, Dodge, & Meece, 1999; Vandivere, Tout, Zaslow, Calkins, & Cappizano, 2003; but see Casper & Smith, 2004), and boys are left in self-care at younger ages than girls (Messer, Wuensch, & Diamond, 1989). Second, there is a difference in how boys and girls handle their time in unsupervised self-care. Boys in unsupervised self-care are more likely to "hang out" outside the home, where problem behaviors are more commonly exhibited, than girls in unsupervised self-care (Goyette-Ewing, 2000). From these previous findings, we would hypothesize that the effect of unsupervised self-care on conduct problems would be stronger for boys. In other words, unsupervised self-care may be associated with problem behaviors for both genders, but if boys spend more time in unsupervised self-care and are more likely to use this time in maladaptive ways, then the link between self-care and problem behaviors may be exacerbated for boys in comparison to girls. Although some studies have found a stronger link between self-care and problem behavior in boys than in girls (Diamond, Kataria, & Messer, 1989; Shumow, Smith, & Smith, 2009), others have found the opposite pattern (Galambos & Maggs, 1991; Steinberg, 1986) or no gender difference in the effect of self-care (Pettit, Bates, Dodge, & Meece, 1999). These inconsistencies in the literature suggest that the role of gender in self-care is poorly understood.

Given that unsupervised self-care allows the adolescent to choose what to do with their unstructured time, we hypothesize that there is something inherently important about this environmental context for affecting developmental outcomes. To account for the possibility that latchkey kids may simply live in a broader neighborhood context that encourages antisocial behavior, such as high crime rates, we include indices of neighborhood risk as covariates in the current study. Previous research has provided evidence for this possibility by demonstrating that the amount of time spent in unsupervised self-care is associated with neighborhood characteristics (Lord & Mahoney, 2007).

The Present Study

In the present study, we used longitudinal data from a sample of 674 Mexican-origin youth to test whether children's hostile aggression and gender moderate the effect of unsupervised

self-care on conduct problems, assessed at ages 10 and 12. Specifically, we addressed the following four research questions: (1) How does time in self-care relate to conduct problems two years later? (2) Is the effect of unsupervised self-care on change over time in conduct problems stronger for boys or girls? (3) Does youths' hostile aggression moderate the effect of unsupervised self-care on change over time in conduct problems? And (4) Do the effects replicate for both mother-reported and observer-coded hostile aggression?

In the current study, we focused on a sample of Mexican-origin youth, a group thought to be at risk for unsupervised self-care due to higher levels of poverty (DeNavas-Walt, Proctor, & Smith, 2009), changing attitudes about sex roles leading to more Latina mothers joining the workforce (Herrera & DelCampo, 1995), and less involvement in structured activities (Brown & Evans, 2002). Previous research has demonstrated that unsupervised time (and more specifically, unsupervised time with peers) is predictive of multiple forms of risky behavior and maladjustment (e.g., lower GPA, lower parental acceptance, substance use, depression, externalizing problems) in Mexican-origin youth (Lee & Vandell, 2015; McHale et al., 2009; Updegraff et al., 2006). Although the developmental pathways characterizing Mexican-origin and European-origin youth sometimes differ, in the present context, we expected to find the same pattern of results. This expectation is based on the fact that *selection*, *evocation*, and *reaction* mechanisms reflect basic processes that are unlikely to be culture specific; hostile aggressive youth from *all* ethnic groups are likely to use unsupervised time in more maladaptive ways.

Establishing the generalizability of these prospective effects to Mexican-origin youth has important implications. Theoretically, it would suggest that the developmental pathways linking these factors are not culture-specific but rather reflect more basic processes. Practically, it would suggest that intervention programs targeting these pathways (e.g., trying to reduce conduct problems by minimizing the affective, cognitive, and behavioral manifestations of maladaptive traits such as hostile aggression) are likely to be effective with Mexican-origin youth. In contrast, if our results differ from prior research on European-origin youth, this would highlight the possibility of culturally-unique developmental pathways, and suggest that factors specific to Mexican-origin youth exacerbate or diminish the link between unsupervised self-care and conduct problems. For example, the hypothesized pathways may be weaker for first-generation (vs. more acculturated) immigrants, given that first-generation youth are less likely to be maladjusted despite experiencing heightened levels of stress relative to latter generation youth (Garcia-Coll & Marks, 2011). Previous research has supported this idea by showing that unsupervised time with peers is especially problematic for later risky behavior when the adolescent is more acculturated (McHale et al., 2009).

Similarly, the expected moderating effect of gender on the relation between unsupervised self-care and conduct problems might be particularly true for Mexican-origin adolescents because of traditional Mexican cultural values that shape the way boys and girls are socialized. Specifically, boys are generally given more autonomy because of the machismo (i.e., a strong sense of masculine pride) gender role (Kopala, 2006), whereas girls are socialized according to the marianismo (i.e., a strong sense of traditional female purity and passivity) gender role, which entails staying at home and taking care of the family. Given

the dearth of studies that have examined minority youth in unsupervised self-care, the present study's focus on Mexican-origin youth provides an important extension of previous research. Further, to evaluate whether there are culturally-unique aspects of this basic developmental process, we tested whether generational status moderates any of the associations between unsupervised self-care and conduct problems.

The present study extends previous research in several other ways. First, we used multi-method data, including child self-report, mother report, and observational assessments of videotaped interactions, thereby reducing the possibility that the observed effects are due to shared method variance. Third, we identified conditions under which unsupervised self-care is more or less a risk factor for this sample of Mexican-origin children, by focusing on the gender of the child and the temperament he/she brings to self-care. Fourth, we examined the effects of unsupervised self-care longitudinally during early adolescence, a critical period for the development of conduct problems. Most previous research has been cross-sectional. Finally, we examine the potential confounding influence of neighborhood disadvantage (Lord & Mahoney, 2007), parent education level (Cain & Hofferth, 1989; Smith, 2000; Lovko & Ullman, 1989), family income (Vandell & Ramanan, 1991; Vandivere et al. 2003; Sarampote, Bassett, & Winsler, 2004), family structure (Cain & Hofferth, 1989; Casper & Smith, 2004), and child age (Casper & Smith, 2002; Casper & Bianchi, 2002); these factors are widely discussed as potential confounds that other researchers in this area control for when examining the effects of unsupervised self-care. However, many prior studies of unsupervised self-care do not control for all of them.

Method

Participants

Data come from a community study of 674 Mexican-origin youth and their parents. The focal child in each family was selected at random from school rosters in the cities of Sacramento and Woodland, California. Sacramento is a large urban area (population approx. 475,000), with a high percentage of low-income students (across schools, 64–71% of students were eligible for free or reduced lunch) and an ethnically diverse population (32–36% Hispanic, 18–21% White, 18–21% Asian, 18–21% African American, 5–9% other; *DataQuest*, 2013). Woodland is a much smaller city (population approx. 55,000), with a slightly lower percentage of low-income students (across schools, 49–63% of students were eligible for free or reduced lunch) and an ethnically diverse population (57–63% Hispanic, 28–33% White, 5% Asian, 1% African American, 3–6% other; *DataQuest*, 2013). Criteria for participating in the study included the focal child being of Mexican descent, in the 5th grade, and living with his/her biological mother. Seventy-three percent of eligible families agreed to participate in the study, similar to recruitment success in other community studies that recruit multiple family members (Capaldi & Patterson, 1987; Conger et al., 2002). The current study focuses on data from when the youth were in the 5th (M_{age} = 10.4 years; *SD* = 0.51) and 7th grade (M_{age} = 12.8; *SD* = 0.49) in 2006 and 2008, respectively. The retention rate in 7th grade was 86%, which results in an analytical sample size of 579. Children were evenly split across gender (50% female). 84% of the mothers and 89% of the fathers were born in Mexico. Family size ranged from 2 to 14 members (*M* = 5.5).

Procedure

During the assessment periods, each family was visited twice in their homes. On average, each home visit took two to three hours. Interviews were conducted in either Spanish or English, depending on the preference of the participant. All interviewers were proficient in both Spanish and English, and most were of Mexican descent. All measures not already available in Spanish were translated to Spanish by bilingual staff members and then back translated to English by another group of bilingual staff members to confirm that the original meaning remained clear. Children were paid $50 and parents $100 dollars each, for their participation.

Measures

Time in unsupervised self-care—In the 5th grade assessment, each child responded to the following two questions: “How many days per week do you take care of yourself in the afternoon or evening after school without an adult being there” and “Think of the days during the week when you take care of yourself after school without an adult being there. How many hours do you usually take care of yourself?” These items served as indicators of a latent variable called ‘time in self-care’ (std λs > .75). Time in self-care ranged from 0 to 45 hours per week (M = 2.0, SD = 4.9 in 5th grade).

Hostile aggression—Mothers reported on their child’s hostile aggression using the Early Adolescent Temperament Questionnaire (EATQ-R: Ellis & Rothbart, 2001), when the child was in the 5th grade (M=1.41, SD=.56). The EATQ-R includes a 6-item “Aggression” subscale that measures hostile and aggressive behaviors including hostile reactivity, person- and object-directed physical violence, and direct and indirect verbal aggression. Sample items include “If [child’s name] gets mad at someone, he/she might hit them” and “[Child] tends to be rude to people he/she doesn’t like.” The items were rated on a scale ranging from 1 (*not at all true*) to 4 (*very true*). The scale had an alpha reliability of .78. Items were distributed randomly to form two 3-item parcels which served as indicators of a latent variable called ‘hostile aggression’ (std λs > .65).

We also examined observer reports of the child’s hostile aggression, when the child was in the 5th grade (M=1.92, SD=1.11). Interviewers explained the structured interaction task, gave prompt cards to parent and child, and then left the room while the parent and child discussed issues within the family. These interactions were scored by raters using an adapted version of the Iowa Family Interaction Rating Scales (Melby & Conger, 2001). Before observing tapes, raters had to independently rate pre-coded interaction tasks and achieve at least 90% agreement with the standard. For purposes of assessing inter-observer reliability, 20% of the tasks were randomly selected and rated by a second observer. Different observers rated the child’s behavior and the parent’s behavior. For the present study, trained observers rated the child’s hostility, angry coercion, antisocial behavior, and dominance towards the mother, which were combined to create a measure of observer-coded hostile aggression. Inter-observer reliabilities were .85, .87, .83, and .70, for each of the respective dimensions of hostile aggression. The composite alpha reliability of these four coded dimensions was .79.

Conduct problems—Early adolescent conduct problems were assessed using the conduct disorder symptom count (27 items) from the Computer-based Diagnostic Interview Schedule for Children at the fifth grade (range = 0 to 10 counts; *M*=0.40, *SD*=1.05) and seventh grade (range = 0 to 7 counts; *M*=0.54, *SD*=1.09) (*C-DISC*; Costello, Edelbrock, & Costello, 1985). These means are comparable to what has been reported for a normative sample of 6th graders in a C-DISC technical report (Godwin, 2003). Questions asked about conduct disorder-related behaviors during the previous 12 months, and included items such as, "You did mean things to people," "You broke/damaged someone else's things on purpose," and "You bullied someone smaller who wouldn't fight back." Responses were recorded dichotomously (0 = no, 1 = yes).

Neighborhood disadvantage—We included two scales that assessed neighborhood disadvantage. The first scale used census data (geo-coded at the block-group level). Seven variables were z-scored and averaged into a single scale: vacant housing, population density, rented housing, black residents, mother-headed households with children, unemployed males, and households on public assistance (*M* = 0.11, *SD* = 0.67, α = .84). The second scale used observer ratings of neighborhood physical deterioration, safety, and noise level (*M* = 2.57, *SD* = 0.87, α = .85). The summary census and observer scales were correlated .40 ($p < .001$).

Generational status—Participants were categorized as 1st generation if they were born in Mexico (29%) and as 2nd+ generation (71%) if they were born in the United States.

Control variables—We included parent education level, family income, family structure, and age of child as controls. To assess parent educational attainment, we used mother's self-reported years of schooling completed in single-parent families; in two-parent families, we used the highest value from mother's and father's self-reported years of schooling completed. Mother and father education level ranged from 0 to 20 years (*M* = 9.4 for mothers and 9.1 for fathers).

To assess family income, we used mothers' self-report of income in single mother households and the sum of mother and father self-reports in two-parent families. Income was measured using a 20-point ordinal response scale, with response options increasing in $5,000 increments (1="Less than $5,000", 2="$5,000–$10,000, …, up to 20="95,000 or more"); average family income was between $30,000 and $35,000. In all analyses, income was used as an ordinal variable ranging from 1 to 20.

Family structure (549 two-parent and 125 single-mother families) and child age were also included as controls, but neither variable had a unique effect on conduct problems in 5th or 7th grade and were consequently excluded from the final analyses reported below. However, all significant main and interactive effects remained significant when these two variables were included in the models.

Results

We used Mplus Version 6 (Muthén & Muthén, 2006) to estimate each model using full information maximum likelihood. We assessed model fit using the Akaike Information Criterion (AIC; Akaike, 1974) and Bayesian Information Criterion (BIC: Schwarz, 1978). Children who were in single-parent families did not have a significantly higher amount of time in self-care (M=2.56) than children who were in two-parent families (M=1.87), $p > .05$. Males reported a higher average amount of time in unsupervised self-care (M=2.46) than females did (M=1.52), $p < .01$. Neither parent education nor family income was significantly related to amount of time in unsupervised self-care.

Intercorrelations among variables are presented in Table 1. Time in unsupervised self-care during 5th grade was positively associated with adolescent conduct problems during 5th (r = .15, $p < .05$) and 7th grade (r = .15, $p < .05$). Time in self-care was associated with mother reports of the child's hostile aggression (r = .18, $p < .05$), but not observer ratings of the child's hostile aggression (r = −.01, $p > .05$). The pattern of associations was generally consistent with expectations, and justified formal tests of the hypotheses. We examined models assuming a Poisson distribution for conduct problems because the residuals were not normally distributed.[1]

Table 2 contains the unstandardized coefficients and fit indices for models testing our predictions of the association between unsupervised self-care and conduct problems, as well as moderation models with the child's hostile aggression and gender. Model 1 includes time in self-care and conduct problems in 5th grade as predictors of conduct problems in 7th grade, controlling for neighborhood disadvantage, parent education level and family income. The coefficients from this model show that conduct problems are somewhat stable from 5th to 7th grade (b = .20), and that children who spend more time in unsupervised self-care show increases in conduct problems during the transition from childhood to adolescence (b = .40).

Model 2 adds child gender and its interaction with time in self-care as predictors of conduct problems in 7th grade, controlling for the variance in 7th grade conduct problems associated with 5th grade conduct problems. The coefficients from this model show that the effect of self-care on conduct problems is carried by the boys, and is nonsignificant for girls (simple slope for boys: b = .43, SE = .14; for girls: b = −.03, SE = .36).

Model 3A adds child hostile aggression (as reported by mother) and its interaction with time in self-care as predictors of conduct problems in 7th grade, controlling for prior levels of conduct problems in the 5th grade. The coefficients from this model show that the effect of self-care on conduct problems is stronger for children rated by mothers as having a more hostile aggressive temperament, and that this effect subsumes the moderation by child gender seen in Model 2 (simple slope for -1SD on hostile aggression: b = .05, SE = .06; for +1SD on hostile aggression: b = .79, SE = .36). Model 4A sets the coefficients for child gender and its interaction with unsupervised self-care to zero. The fit of this model was better than model 3A (both AIC and BIC were smaller), indicating that the moderation by

[1]We also analyzed the data using the natural log of unsupervised time in self-care to account for independent variable skew. The results remain the same in terms of significance.

gender seen in Model 2 is fully explained by differences in mother reports of the child's hostile aggression. As shown in Figure 1, level of unsupervised self-care was positively related to increases in conduct problems, but only among adolescents rated by their mothers as having a highly aggressive temperament.

Models 3B and 4B replace mother-reported child hostile aggression with observer-rated child hostile aggression. Consistent with Model 3A, Model 3B shows that the effect of self-care on conduct problems is stronger for children rated by observers as having a more hostile aggressive temperament, and that this effect subsumes the moderation by child gender seen in Model 2 (simple slope for -1SD on hostile aggression: b = .01, *SE* = .04; for +1SD on hostile aggression: b = .81, *SE* = .29; see Figure 2). Consistent with the results for mother-reported hostile aggression, the fit of Model 4B was better than model 3B (both AIC and BIC were smaller), indicating that the moderation by gender seen in Model 2 is fully explained by differences in observer reports of the child's hostile aggression.

We also conducted multiple group analyses to compare 1st and 2nd+ generation youth on all of our hypothesized associations. Generational status did not moderate any of the associations between unsupervised self-care and conduct problems. Taken together, the results suggest that the gender difference in the effect of self-care on conduct problems can be explained by differences in mother- or observer-rated hostile aggression, even while controlling for neighborhood disadvantage, parent education level and family income.[2]

Discussion

Prior research on child self-care suggests that unsupervised time at home may be a risk factor for child behavior problems (Steinberg, 1986; Cohen et al. 2002; Mott et al., 1999). However, little research has focused on whether these associations generalize to minority populations, and the factors that may magnify or diminish these effects. We examined how the dispositional tendencies of the child, as well as the child's gender, may contribute to increased or decreased problem behaviors when in unsupervised self-care.

As hypothesized, time spent in self-care was prospectively associated with increases in conduct problems for our sample of Mexican-origin children. The increased rate of conduct problems among latchkey children is noteworthy not only because it is consistent with prior research, but also because we controlled for factors (i.e., neighborhood disadvantage, parent education, and family income) that are often associated with level of self-care, which created a more stringent test of the effect. Further, generational status did not moderate any of the associations between unsupervised self-care and conduct problems, which suggests that these prospective effects are basic developmental processes that can be generalized to Mexican-origin youth. Thus, the more time children spend without an adult supervising them, the more likely they are to exhibit conduct problems such as lying, stealing, bullying, fighting, and getting in trouble at school.

[2]We re-ran the models using the symptom count of conduct disorder that excluded 6 items assessing direct aggression, and recovered the same pattern of results (both in terms of effect and statistical significance).

The main effect of unsupervised self-care on conduct problems was qualified by two important interaction effects, one involving the child's gender and the other involving the child's temperament. The observed gender interaction is consistent with previous research showing that the effect of unsupervised self-care is stronger for boys (Casper & Smith, 2004; Lovko & Ullman, 1989; Messer, Wuensch, & Diamond, 1989; Mulhall, Stone, & Stone, 1996; Pettit, Bates, Dodge, & Meece, 1999; Vandivere, Tout, Zaslow, Calkins, & Cappizano, 2003). However, when we included hostile aggressive temperament as a factor in the model, the gender by self-care interaction effect was no longer significant, suggesting that unsupervised boys may be at greater risk for conduct problems at least in part because they are more likely to display hostile aggressive tendencies.

The temperament by self-care interaction further highlights the fact that self-care does not necessarily lead to conduct problems. The moderating effect of hostile aggression is a classic person-environment interaction (Donnellan, Lucas, & Fleeson, 2009; Scarr & McCartney, 1983). Within this framework, there are three non-mutually exclusive explanations for the observed interaction effect: selection, evocation, and reaction. In the present context, we would not expect *selection* processes to be particularly important because it is typically the parent who chooses whether or not the child spends time in unsupervised self-care. However, children do have some leeway in choosing how, and with whom, they spend their time in unsupervised self-care, which does suggest one selection pathway to conduct problems (e.g., if hostile aggressive children choose to spend their unsupervised time with deviant peers and siblings). A related explanation involves an *evocative* person-environment interaction. For example, the hostile aggressive child may evoke changes in peers and siblings (e.g., eliciting more antisocial behaviors from others) and/or evoke more maladaptive parenting behaviors, such as more lenient or vague guidelines about what kinds of activities are appropriate during unsupervised time (e.g., whether it is okay to go outside of the home, have friends visit, etc.). Finally, hostile aggressive kids may simply *react* differently to the unsupervised self-care context than less aggressive kids. Specifically, youth with a hostile aggressive temperament may interpret the lack of adult supervision as conveying the message that they can do whatever they want and indulge their impulses, including engaging in antisocial acts, whereas less aggressive youth may interpret the situation as requiring them to regulate their own behavior and become more self-reliant by showing increased responsibility.

Thus, although it is possible that unsupervised self-care is inherently risky in and of itself, we suggest that it is *how* children are using that unstructured time that may produce disadvantageous outcomes later in development. Future research should examine whether it matters *where* hostile aggressive youth choose spend time (inside the home vs. friend's house vs. in the neighborhood), and aim to disentangle whether hostile aggressive youth are choosing to "hang out" with more deviant peers and siblings or eliciting more negative behaviors from their peers and siblings. Regardless of the process, the present findings suggest that pharmacological (Tang et al., 2009), therapeutic (De Fruyt, Van Leeuwen, Bagby, Rolland, & Rouillon, 2006), and experimental (Jackson, Hill, Payne, Roberts, & Stine-Morrow, 2012) interventions known to change temperamental traits are likely to reduce risk for conduct problems, particularly in families where the child is left

unsupervised. Alternatively, it is possible that adolescents who spend more time in unsupervised self-care, especially hostile aggressive youth, are not participating in as many developmentally-enriching, structured programs, which further impedes adaptive behavior. Future research should examine whether *selection*, *evocation*, and *reaction* processes may lead hostile aggressive youth to participate *less* in structured activities, or whether exposing hostile aggressive youth to structured activities would otherwise decrease their risk of conduct problems later in adolescence.

The current investigation has several limitations that merit attention. First, time in self-care and conduct problems were both reported by the child (albeit via a structured psychiatric interview), which could inflate the observed association between self-care and conduct problems due to shared-reporter variance. Second, our study examined self-care in 5th grade and changes in conduct problems during the transition to early adolescence. Although our sample is relatively young and the frequency of problem behaviors fairly low, it is important to note that conduct problems in early adolescence lay the groundwork for later more frequent and severe antisocial acts. Thus, future research should test whether the observed interaction effects replicate, and perhaps even strengthen, later in adolescence and early adulthood. Third, the study design does not allow for strong conclusions regarding the causal influence of unsupervised self-care because relations between variables may have been caused by third variables that were not assessed. However, given that we examined prospective effects controlling for the variance in 7th grade conduct problems associated with 5th grade conduct problems, and also controlled for five relevant confounding factors that could have provided alternative explanatory accounts, the present study strengthens the case for the causal influence of self-care on conduct problems. Fourth, time in self-care was based entirely on after-school care, and consequently the findings may not generalize to measures of self-care that include the amount of unsupervised time children experience on the weekends. Finally, although we did not find that generational status moderated the associations between unsupervised self-care and conduct problems in our Mexican-origin youth sample, future research would benefit from examining more fine-grained cultural values, such as investigating whether culturally prescribed gender roles (e.g., machismo/marianismo) and/or English-language proficiency result in differential outcomes from unsupervised self-care.

Notwithstanding these limitations, the present study contributes to the existing literature in several ways. The findings replicate the results of most past research on latchkey children, and suggest that Mexican-origin youth are similar to youth of other ethnicities in terms of their susceptibility to conduct problems based on time in self-care. This study also benefitted from incorporating several theoretically-relevant moderators, including multiple measures of hostile aggression (child, parent, and observer report), and analyzing the subtleties of self-care by measuring it on a continuous scale of hours instead of a dichotomous variable like ‘latchkey status.’ Furthermore, and most importantly, we contribute to the literature by demonstrating that child dispositional tendencies may be a key influence on whether unsupervised self-care leads to conduct problems in adolescence, above and beyond factors such as neighborhood disadvantage, parent education and family income, and also controlling for prior levels of conduct problems. Future research should not only examine

these relations later in adolescence, but also examine different temperamental tendencies that may diminish the adverse effects of being in unsupervised self-care. For example, children high in the temperamental trait of effortful control may be more resilient to self-care, and perhaps may even exhibit some of the theorized positive benefits afforded by being left alone, such as increased independence and autonomy. Identifying these risk and protective factors will help researchers, practitioners, and parents better understand the conditions under which latchkey youth are particularly likely to engage in maladaptive behaviors, and thus help identify families most in need of intervention to reduce the time their children are left unsupervised.

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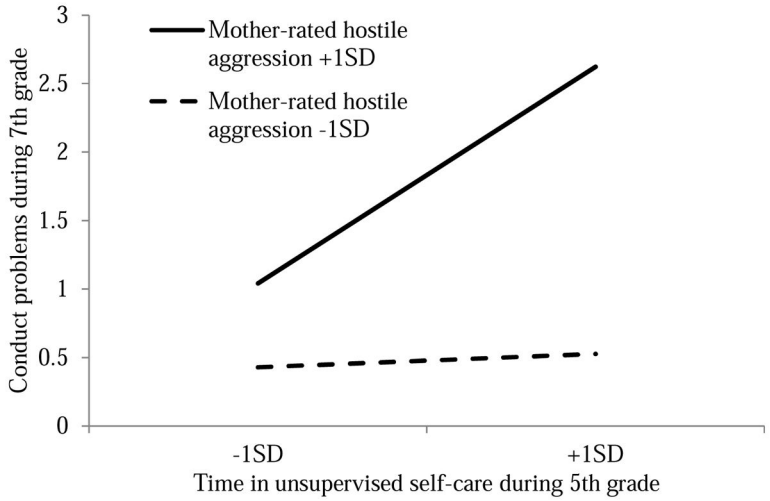

Figure 1.

Mother-rated hostile aggression moderates the effect of self-care on change in conduct problems.

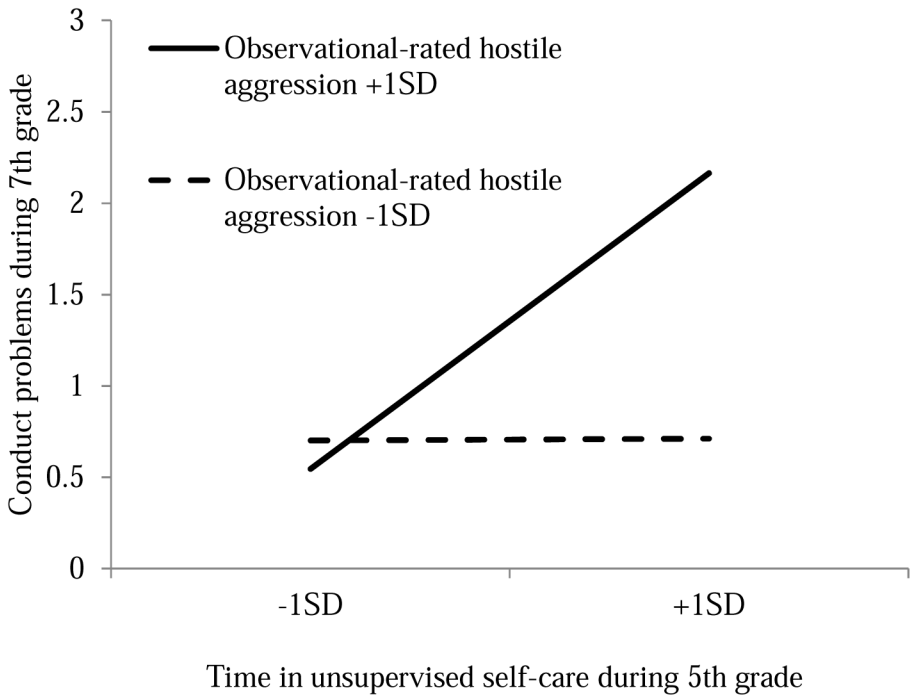

Figure 2.
Observational-rated hostile aggression moderates the effect of self-care on change in conduct problems.

Table 1

Intercorrelations among Study Variables

Variable	1	2	3	4	5	6	7	8	9	10	11	12
1. Time in self-care	-											
2. Conduct problems during 5th grade	.15	-										
3. Conduct problems during 7th grade	.15	.26	-									
4. Hostile aggression during 5th grade[a]	.18	.36	.32	-								
5. Hostile aggression during 5th grade[b]	−.01	.12	.14	.14	.15	-						
6. Child is female	−.16	−.06	−.08	−.11	−.09	−.02	−.04	-				
7. Family income	.01	−.02	−.04	−.08	.04	.01	.02	−.04	-			
8. Parent education level	.01	.01	.02	−.08	−.12	.06	−.07	.04	.29	-		
9. Neighborhood disadvantage (census)	−.01	.04	.10	.03	.04	.07	.04	−.01	−.37	−.08	-	
10. Neighborhood disadvantage (observer)	−.04	.13	.03	.12	.10	.05	.07	.01	−.38	−.23	.40	-

Note. Coefficients > .10 are significant at α = .05.

[a] mother report

[b] observational ratings

Table 2

Unstandardized Coefficients for Models Predicting Conduct Problems During 7th Grade

Variable	Model 1	Model 2	Model 3A	Model 4A	Model 3B	Model 4B
1. Conduct problems during 5th grade	.20(.05) *	.20(.05) *	.12(.05) *	.12(.05) *	.21(.05) *	.21(.05) *
2. Time in self-care	.40(.16) *	.40(.16) *	.42(.21) *	.42(.21) *	.40(.12) *	.40(.12) *
3. Child is female		−.18(.10)	−.12(.23)	-	−.08(.22)	-
4. Child is female x time in self-care		−.43(.20)*	−.33(.22)	-	−.21(.19)	-
5. Hostile aggressiona			.69(.15) *	.68(.15) *	-	-
6. Hostile aggressiona x time in self-care			.37(.14) *	.37(.14) *	-	-
7. Hostile aggressionb					.32(.14) *	.32(.14) *
8. Hostile aggressionb x time in self-care					.54(.25) *	.54(.25) *

Note. N=523 for analyses using mother-reported hostile aggression. N=487 for analyses using observer-ratings of hostile aggression. All models include both indices of neighborhood quality, parent education level, and family income as controls.

[a] mother report

[b] observational ratings

* $p < .05$.