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Effects of a School Readiness Intervention for Children in Foster Care on Oppositional and Aggressive Behaviors in Kindergarten

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1. Introduction

Children's oppositional and aggressive behaviors in their classrooms jeopardize not only their own academic success but also the learning opportunities of their classmates. In classrooms in which there are generally higher levels of disruption and aggression, children show increases in their own aggression over time (Barth, Dunlap, Dane, Lochman, & Wells, 2004; Thomas, Bierman, Powers, & the Conduct Problems Prevention Research Group, 2011). Additionally, oppositional and aggressive behaviors increase the likelihood that a child will be referred for special education services, particularly if the child is also having academic difficulties (Gottlieb & Weinberg, 1999). Over time, children who display early disruptive and aggressive behaviors are more likely to develop mental health problems and substance use disorders than their less disruptive peers (Althoff, Verhulst, Rettew, Hudziak, & van der Ende, 2010; Bradshaw, Schaeffer, Pears, & Ialongo, 2010; Moffitt, Caspi, Harrington, & Milne, 2002).

Children in foster care are at particularly high risk for difficulties in school. These include not only academic failure but also oppositional and externalizing behaviors (Zima, Bussing, Freeman, Yang, Belin, & Forness, 2000). Such behaviors are likely to contribute to the higher rates of suspensions and expulsions experienced by children in foster care, although they are not likely to be the sole factors contributing to these higher rates. Children in foster care are about three times more likely to face disciplinary actions in school than their peers (Scherr, 2007). Additionally, oppositional and aggressive behaviors may be factors in the higher rates of special education placement in this population, especially for emotional disturbance (Goerge, Van Voorhis, Grant, Casey, & Robinson, 1992); children in foster care are almost 5 times more likely to receive special education services than their peers who have not been placed in out-of-home care (Scherr, 2007). These services are not only resource intensive, they are also costly.

Deficits in self-regulatory abilities may underlie oppositional and aggressive behaviors (Kim & Deater-Deckard, 2011; NICHD Early Child Care Research Network, 2003). Children who

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have been maltreated and subsequently placed in foster care appear to have particular vulnerabilities in self-regulation that may be linked to their histories of early adversity. For example, children in foster care have poorer inhibitory control (the ability to inhibit prepotent responses in favor of a less practiced response) than do children from low SES backgrounds who have not been either maltreated or placed in foster care (Pears, Fisher, Bruce, Kim, & Yoerger, 2010), and the number of transitions that children in foster care have experienced appears to be negatively associated with inhibitory control (Lewis, Dozier, Ackerman, & Sepulveda, 2007; Pears, Bruce, Fisher & Kim, 2010).

At least in part because of their known associations with appropriate, non-disruptive behaviors, self-regulatory abilities are recognized as essential to school success (Blair & Diamond, 2008; Howse, Calkins, Anastopoulos, Keane, & Shelton, 2003), and as part of a constellation of abilities that are necessary for school readiness (Blair, 2002; McClelland et al., 2007). Given their particular vulnerabilities in self-regulatory abilities and risks for exhibiting problem behaviors in school, intervening to promote greater self-regulation as a way to prepare children in foster care to enter kindergarten may be an effective way to advance better school outcomes for these children.

Notably, children in foster care are a particularly challenging population with which to intervene for several reasons. First, although a number of intervention programs designed for use in general or low-SES populations to address self-regulatory skills are now available (Diamond & Lee, 2011), their use is not necessarily yet widespread in typical programs and such interventions have yet to be tested specifically with children in foster care. Second, the multiple primary caregiver transitions that children in foster care often experience are likely to have a detrimental effect on caregiver involvement in early literacy activities and other aspects of the learning environment, an important aspect of kindergarten preparedness (Evans, Shaw, & Bell, 2000; Frijters, Barron, & Brunello, 2000; Senechal & LeFevre, 2002). Although some preschool programs, most notably Head Start, emphasize caregiver involvement, not all such programs do. Finally, children in foster care may not receive all of the dosage of school readiness programs that are designed to operate across the school year due to the possibility of multiple placement transitions (Pears & Fisher, 2005). For these reasons, interventions for children in foster care might need to accommodate the short-term nature of home placements and include emphases on self-regulatory skills and caregiver involvement in early literacy in addition to other core components of school readiness to better serve this high-risk population.

The KITS Program was designed to be a focused, short-term intervention to increase school readiness prior to kindergarten entry and to promote better subsequent school functioning in children in foster care (Pears, Fisher, & Bronz, 2007; Pears, Fisher, Heywood & Bronz, 2007). The program features a 16 week group-based school readiness curriculum for children and groups for caregivers. It occurs in two phases. The *school readiness phase* (approximately two thirds of the curriculum) occurs in the 2 months before kindergarten entry and includes child playgroups that meet twice weekly and caregiver groups that meet twice monthly. This phase is focused on preparing children for school. The *transition/maintenance phase* occurs in the first 2 months of kindergarten, during which the children meet once a week for playgroups and the caregivers continue to meet twice monthly. This phase focuses on supporting a positive transition to school.

The KITS Program is based on the underlying rationale that efficacious interventions have to be *developmentally timed* to occur at the critical transition to school, an optimal period for intervention as children are in the process of reorganizing their competencies and might be particularly open to influence (Pianta & Cox, 1999). Although children in foster care may receive other services such as early childhood special education or Head Start, these services

typically follow an academic calendar. This may cause a summer “services gap”, during which children may fail to gain or even lose critical skills necessary for school success (Alexander, Entwisle, & Olson, 2001). Another important feature of the KITS Program is its *focus on self-regulatory skills* in addition to foci on early literacy and social skills. Within the program curriculum, self-regulation skills are explicitly taught, modeled, and reinforced. As is noted above, such a focus may be particularly important for children in foster care. A third important feature of the intervention is the provision of *high-density learning opportunities*. Hamre and Pianta (2007) define learning opportunities as “a set of theoretically driven dimensions of interactions between adults and children with empirically supported links to children’s social, emotional, and academic achievement” (p. 50). Within many typical early learning settings, children might spend less than half of their time in instructional activities, and supports for these activities can be of fairly low quality (Hamre & Pianta). The KITS curriculum is designed to include a high density of occurrences of learning opportunities specifically focused on critical early literacy, social, and self-regulatory skills within the ecologically valid context of the classroom.

In an earlier study of the immediate effects of the school readiness phase of the KITS Program, it was demonstrated that children in foster care who received the KITS Program showed greater gains in both their early literacy and self-regulatory skills across the 8 weeks of the school readiness phase of the intervention just prior to kindergarten entry than did children who received foster care services as usual (Pears et al., in press). The purpose of the present study was to examine the longer-term effects of both phases of the intervention with a specific focus on classroom oppositional and aggressive behaviors at the end of the kindergarten year. It was hypothesized that children in foster care who had been randomly assigned to receive the intervention would show lower rates of these behaviors than their peers who had not received the intervention, controlling for baseline levels of the behaviors, child gender, and level of disruptiveness of all students in the classroom.

2. Method

2.1. Participants

One hundred ninety-two children in foster care and their caregivers participated in a randomized efficacy trial of the KITS Program. To be eligible to participate, each child had to be in nonkinship or kinship foster care, entering kindergarten in the fall, a monolingual or bilingual English speaker, and not involved in another treatment protocol closely associated with the KITS intervention. A staff member first contacted an eligible child’s caseworker (i.e., the legal guardian while the child is in foster care) to request consent for the child to participate and then contacted the caregiver(s) to invite them to participate. For a successful recruitment, both the caseworker and caregiver(s) had to consent. Because of the complexity of this multistep process, all families were randomized to the KITS group or to a foster care comparison (FCC) group prior to contacting the caseworker and caregiver(s). Children in the FCC group did not receive the intervention but continued to receive any other services for which they were eligible.

Of the 339 families who were eligible to participate in the study, 219 (65%) initially verbally agreed to participate (113 KITS; 106 FCC). Twenty-seven of these families (11 KITS; 16 FCC) withdrew from the study before baseline data were collected. The demographic characteristics of the 192 participating families (102 KITS; 90 FCC) are presented in Table 1. There were no statistically significant differences between groups on any of these variables. It should be noted that the proportions of participants in each ethnic category is very similar to those of the children in foster care in the state in which this study was conducted (Child Welfare League of America [CWLA], 2012).

2.2 Study Design and Procedures

The children and their caregivers participated in center-based assessments that employed standardized testing, questionnaires, and structured interviews at the beginning of the summer before kindergarten prior to the intervention (Time 1 [T1]), at the end of the summer just prior to kindergarten entry but after the school readiness phase of the intervention (Time 2 [T2]), and at the end of the kindergarten year (Time 4 [T4]). Teacher interviews and direct observations of the children's behaviors during structured instruction time and unstructured playground time were conducted in the fall (Time 3 [T3]) and spring of the kindergarten year (T4).

2.2.1 Intervention protocol—The KITS intervention consists of two primary components: a 24-session school readiness group (2 hr, twice weekly in the summer; 2 hr, once weekly in the fall) focused on promoting early literacy and social-emotional skills in children and an 8-session caregiver group (2 hr, every 2 weeks) focused on promoting caregiver involvement in early literacy and school. The intervention covers the 2 months prior to kindergarten entry and the first 2 months of kindergarten.

2.2.2 School readiness group structure and curriculum—Like a typical kindergarten schedule, the school readiness group sessions have a highly structured, consistent routine with many transitions between activities. The manualized school readiness group curriculum covers: *early literacy skills* (e.g., letter names, phonological awareness, conventions of print, and comprehension), *essential social skills* (e.g., reciprocal social interaction, social problem-solving, and emotion recognition), and *self-regulatory skills* (e.g., handling frustration and disappointment, controlling impulses, following multistep directions, listening, and making appropriate transitions). The curricular objectives are clearly specified for each session by skill domain, and the activities are designed to promote these specific skills. For example, the early literacy activities include a letter of the day (letter naming and letter-sound knowledge), a poem of the week (phonological awareness, concepts about print, and language), and storybook and dramatic activities (understanding of narrative). Prosocial and self-regulatory skills are taught using a blend of instruction (e.g., teachers define *sharing*, provide verbal examples, and ask the children for examples), role-playing (e.g., teachers model sharing and *not sharing* in a series of skits and children are asked to differentiate between the two), and activity-based intervention (e.g., children must complete an art project requiring that they share the materials); the children receive feedback and guided practice in using the target skills. Multiple opportunities for using inhibitory control, maintaining attentional focus, and practicing newly acquired social skills are embedded across activities. A graduate-level lead teacher and two assistant teachers conduct the school readiness groups with 12–15 children using a manualized set of empirically based instructional and positive behavior management strategies. The high staff-to-child ratio provides children with high levels of support and feedback while practicing new skills.

2.2.3 Caregiver group structure and curriculum—The caregiver group meetings coincide with the school readiness group meeting times. Each group is led by a facilitator and an assistant. The manualized caregiver curriculum includes foci on skills relevant to the kindergarten transition (e.g., helping children to develop their early literacy skills) and to promoting child regulation (e.g., behavior management skills that parallel those used in the school readiness groups). The facilitator presents information, leads structured group discussions of the materials and addresses questions and concerns. Skill acquisition is reinforced via role-plays and discussion. Any caregiver who misses a meeting receives a home visit (or a phone call if necessary) from the facilitator to cover the content and materials for that session.

The caregivers and children receive supplemental materials to support the implementation of new skills. These include weekly school readiness group homework assignments, weekly *Home–School Connection* newsletters outlining the school readiness group topics for a given week, and home practice activities.

The KITS school readiness group teachers and caregiver group facilitators complete a standardized training program before the school readiness groups begin. At weekly intervention team meetings, the progress of individual families within the three school readiness domains is discussed, and strategies to address behavioral and literacy needs within the broader curriculum are planned.

Attendance at school readiness groups and caregiver groups (or caregiver home visits and phone calls) was documented. On average, across both the school readiness and the transition/maintenance phases of the intervention, the children attended 69% of the playgroup sessions, and the majority of the children (57%) attended 75% or more of the sessions. The caregivers received 61% of the sessions on average, and the majority (55%) received 75% or more of those sessions. Implementation fidelity for the school readiness groups was determined by trained coders in vivo or via videotape based on systematic coding of the presence or absence of key elements of the curriculum (98% of the curriculum components were covered; range = 75 – 100%). Additionally, coders rated the teachers on implementation of key behavior management strategies (e.g., “Pre-taught expectations”, “Ignored or re-directed child non-compliance”) on a 3 point scale: 1 ‘none of the time’, 2 ‘some of the time’, and 3 ‘all of the time’. On average, teachers received a rating of 2.95. Implementation fidelity for the caregiver groups was determined through caregiver ratings of whether the weekly topics had been covered (100% of the components were covered).

2.2.4 Foster care comparison group—Children in this group received services commonly offered by the child welfare system, which could include individual child psychotherapy, participation in Head Start or another early childhood education program, and services such as speech therapy. No attempt was made to influence the type or amount of services given to children or their families.

3. Measures

3.1 Intervention status

In these analyses, intervention status was represented by a dichotomous variable: 1 (*KITS intervention group*) or 0 (*FCC group*).

3.2 Outcome: Oppositional and aggressive classroom behaviors

The child’s oppositional and aggressive behaviors in school were measured via the teacher report using the raw scores from the aggressive ($\alpha = .95$) and delinquent ($\alpha = .59$) behavior subscales of the Teacher Report Form (Achenbach, 1991a). These subscales were used because they were thought to best reflect disruptive, rule-breaking behaviors rather than problems with attention. Additionally, the oppositional subscale of the Conners’ Teacher Ratings Scales-Revised: Short version (CTRS:S) was used ($\alpha = .93$).

3.3 Control variables

A number of variables were included in the analyses to control for other factors that could influence a child’s disruptiveness in a classroom other than intervention status.

3.3.1 Child oppositional and aggressive behaviors at baseline (T1)—The child’s level of oppositional and aggressive behaviors at T1, before the intervention began, was

measured using raw scores on the aggression ($\alpha = .91$) and delinquency ($\alpha = .67$) subscales of the Child Behavior Checklist/4–16 (CBCL; Achenbach, 1991b) completed by the child's caregiver. The two subscales were strongly positively correlated ($r = .69, p < .01$), so the scores were standardized and combined to produce one caregiver rating of oppositional and aggressive behaviors score.

3.3.2 Overall level of disruptiveness in the classroom—At T4, the overall level of disruptiveness of all students in the child's kindergarten classroom was measured using both teacher and observer ratings. Teachers indicated on a scale of 1 “*Group misbehaves frequently and is almost always difficult to manage*” to 5 “*Group behaves exceptionally well*” the difficulty of the class as a whole. Scores were reversed so that higher scores represented greater disruptiveness in the class as a whole. Additionally, observers conducted observations of the child's behavior during structured classroom time. Two 15 minute observations were made a week apart. As part of those observations, coders rated the general level of classroom disruption on a scale of 1 “*No instances of acting out or disruptive behavior*” to 5 “*More than seven disruptions*”. They also rated the level of focused attention in the classroom on a scale of 1 “*Students (90% or more of the class) are focused throughout the entire period*” to 5 “*Students are on-task less than 40% of the session*”. The scores for each of the ratings items were averaged across the two observation periods. The teacher ratings and observer ratings were then standardized and averaged to form one overall rating of classroom disruption (standardized $\alpha = .62$).

3.3.3 Child gender—As boys are diagnosed with oppositional behaviors at higher rates than girls (American Psychiatric Association, 1994), gender was included as a covariate in the analyses. The variable was coded 0 “*male*” or 1 “*female*”.

3.4 Data analysis plan

Bivariate correlations among study variables were examined first. Data were then analyzed using Structural Equation Modeling (SEM) in Mplus 6.1 (Muthén & Muthén, 1998–2010). Treatment status was the main predictor of interest and the latent variable represented by three indicators of the child's disruptive behavior at the end of their kindergarten year (T4) was the outcome. Additionally, the child's level of oppositional and aggressive behavior at T1, gender, and the overall level of disruptiveness of all students in the child's kindergarten classroom were included in the model as control variables. The Maximum Likelihood with Robust (MLR) estimator was used to account for the nonindependence due to having several siblings in the data. Mplus employs full information maximum likelihood (FIML) estimation, which has been known to provide unbiased estimates when data are missing at random (Arbuckle, 1996).

4. Results

Bivariate correlations between the raw outcome indicators and the control variables are shown in Table 2. The three indicators of children's oppositional and aggressive classroom behavior were all significantly and positively associated with one another. Overall, these indicators were significantly and negatively related to the child's gender, suggesting that girls showed lower levels of these behaviors. Similarly, being a girl was significantly and negatively associated with the child's oppositional and aggressive behavior at baseline. Children's aggressive and delinquent behaviors at T4, but not their oppositional behaviors, were marginally significantly associated with their oppositional and aggressive behavior at T1. In addition, as would be expected, all three indicators of children's oppositional and aggressive behavior at T4 were significantly positively associated with the concurrent level of overall disruptiveness in the classroom.

4.1 Multivariate analyses

Three indicators of children's oppositional and aggressive behavior at T4 – teacher ratings of aggressive, delinquent, and oppositional behavior--formed a latent variable for oppositional and aggressive behaviors. Because both the child's gender and the child's oppositional and aggressive behaviors at T1 tended to be correlated with T4 oppositional and aggressive behaviors, both variables were included in the model to control for their potential effects. In addition, the level of disruption in the class at T4 was included as a control variable as it was significantly associated with children's concurrent oppositional and aggressive behaviors in the bivariate correlations. Covariances were included to improve model fit. The model shown in Figure 1 fit the data well with a chi-square of 8.42, $df = 11$, $p = .68$, $CFI = 1.00$, $TLI = 1.01$, and $RMSEA = .00$. All three indicators significantly loaded on the latent variable for children's oppositional and aggressive behavior at T4. There was a significant intervention effect on children's oppositional and aggressive behavior at T4: children who participated in the KITS program tended to show lower levels of oppositional and aggressive behaviors at the end of the kindergarten year. The means and SDs of the latent variable were .04 and .19 for the KITS intervention group and .11 and .23 for the FCC group. Cohen's d was equal to .33, which is defined as a moderate effect size. As expected, being a girl was significantly and negatively related to oppositional and aggressive behavior at T4. The level of classroom disruption was significantly positively associated with children's oppositional and aggressive behaviors at T4. Children's baseline oppositional and aggressive behaviors were not significantly related to T4 behaviors in the model. The model explained 21% of the variance in the outcome measure ($p = .001$).

5. Discussion

Oppositional and aggressive behavior in the classroom is potentially costly both to the student who engages in such behaviors and to his or her classmates. Not only may the student lose opportunities to concentrate and learn but the classmates' own disruptive behaviors may increase, perhaps as a result of social learning. Further, students who show aggressive behavior in early elementary school are likely to be diagnosed with conduct problems by the middle of elementary school (Miller-Johnson, Coie, Maumary-Gremaud, Bierman, & the Conduct Problems Prevention Research Group, 2002). In the short term, this can lead to the student being referred to special education services at a cost almost double that of regular education services (Chambers, Parrish, & Harr, 2004). In the long term, oppositional and aggressive students may develop delinquent behaviors and poor peer relations in middle and high school which can then lead to mental health and substance abuse problems in adulthood (Miller-Johnson, Coie, Maumary-Gremaud, Lochman, & Terry, 1999; Vitaro, Pedersen, & Brendgen, 2007). All of these outcomes may lead to the need for costly public assistance and mental health services. Thus, from a preventive intervention standpoint, programs that prevent oppositional and aggressive behavior in early elementary school may lead to both improved academic and psychosocial functioning for the individual and cost savings for society.

The results of the randomized clinical trial presented here suggest that the KITS Program may be an effective way to prevent disruptive classroom behaviors in a group at high risk for school difficulties. Children in foster care are more likely than their peers to engage in behaviors that end in school disciplinary action (Scherr, 2007) and to be referred for special education services for emotional and behavioral difficulties (Goerge et al., 1992). Delivered at the critical transition of kindergarten entry, the KITS Program appears to decrease the likelihood that the children will be oppositional and aggressive in their classrooms up to 8 months later. This in turn might reduce the likelihood that these children will engage in disruptive and externalizing behaviors as they proceed through elementary school, potentially setting the stage for better outcomes throughout school.

Positive effects of interventions to prevent oppositional and aggressive behavior in the classroom could also extend beyond the individual student. For example, Thomas and colleagues (2011) found that higher levels of aggression in a child's first grade classroom predicted increases in the individual child's aggressiveness by second grade. Additionally, it appears that for children who are aggressive themselves, being in a classroom characterized by higher levels of aggression confers additional risk for continuing such behavior through middle school while this is not true for aggressive children in low aggression classrooms (Kellam, Ling, Merisca, Brown, & Ialongo, 1998). Thus, reducing the oppositional and aggressive behavior of individual students may have positive effects on the classroom as a whole.

From a practitioner standpoint, the results of this study suggest that improving school readiness in children in foster care may improve behavior across kindergarten. This should be a particular focus of early intervention efforts with these children. The positive results of this short-term intervention also suggest that targeting critical transition points in the lives of these children and focusing on essential skills for the successful navigation of those transitions may be an efficacious, and cost-effective, means of preventive intervention.

5.1 Limitations and future directions

There are a few limitations to the present study that should be noted. First, our sample was moderate in size compared to other randomized trials of prekindergarten interventions. However, this reflects the challenges inherent in recruiting participants in this population. Second, although the ethnicity of the sample was reflective of the state in which the participants lived, there were smaller proportions of some ethnic groups such as African Americans than would be predicted using national demographic patterns (CWLA, 2012). Third, the measures of overall classroom disruption were not independent of the measures of the oppositional and aggressive behavior of the focal children, as they focused on all of the children in the class including the study child. While positively correlated, the two measures were not singular. Thus, it is likely that while they might have overlapped, the measure of classroom disruptiveness was reflecting the behavior of students other than the study child.

Although the present study focused on intervention effects on oppositional and aggressive behaviors in the classroom, the intervention is aimed at improving a range of skills that may subsequently affect other behaviors such as internalizing. Thus, future research will examine intervention effects on other school outcomes. Additionally, this paper examined the combined effects of the two components of the intervention, the child school readiness playgroup and the caregiver group. Future research will examine the independent effects of the intervention components.

Overall, results of this study suggest that a short-term, focused intervention targeted at school readiness skills, including self-regulation skills, is effective in helping children in foster care to avoid oppositional and aggressive behaviors in the classroom up to 8 months after the completion of the intervention. As children in foster care are at particular risk for such behavior, and the long-term negative consequences, this is a particularly important finding. By helping to prepare these children for school, it may be possible to positively affect their behavior across the early elementary school grades.

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Highlights

- We examine the effects of a school readiness intervention on children in foster care.
- Outcomes include children's oppositional and aggressive behaviors in kindergarten.
- The intervention was associated with less oppositional and aggressive behavior.
- Implications for long-term academic and social outcomes are discussed.

Figure 1.
Intervention effects on child oppositional and aggressive classroom behaviors in kindergarten

Table 1

Demographic characteristics and descriptive statistics of study variables by treatment group

	KITS group (n = 102)	FCC group (n = 90)
Age (years)	5.26 (0.33)	5.25 (0.35)
Male (%)	52	46
Nonkinship foster care (%)	62	61
Ethnicity (%)		
European American	55	51
Latino	30	31
African American	1	0
Native American	2	0
Pacific Islander	2	0
Mixed race	10	18
T4 Teacher Report Form aggressive behavior subscale	9.53(10.46)	11.37 (10.48)
T4 Teacher Report Form delinquent behavior subscale	1.99 (2.01)	2.57 (2.38)
T4 Conners' Teacher's Rating Scale oppositional behaviors subscale	1.92 (3.24)	2.73 (3.58)
T1 Child oppositional and aggressive behavior	8.28 (4.52)	8.52 (5.69)
T4 Overall level of disruptiveness in the classroom	-0.003 (.71)	0.04 (.85)

Note. Values in the parentheses represent standard deviations.

Table 2

Correlations between the variables in the model

	1	2	3	4	5
1. T4 Teacher Report Form aggressive behavior subscale	--				
2. T4 Teacher Report Form delinquent behavior subscale	.67**	--			
3. T4 Connors' Teacher's Rating Scale oppositional behaviors subscale	.86**	.59**	--		
4. T1 Child oppositional and aggressive behavior	.14 [†]	.15 [†]	.11	--	
5. T4 Overall level of disruptiveness in the classroom	.23**	.27**	.21*	.09	--
6. Child gender (0 = male, 1 = female)	-.26**	-.27**	-.15 [†]	-.16*	-.12

[†] $p < .10$;* $p < .05$;** $p < .01$