Understanding the Effect of Non-responsive Parenting on Offspring Externalizing Problems in Young Adulthood: Examining the Roles of Stress Response and Culture

by

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ABSTRACT

Longitudinal data from European-American (EA) and Mexican-American (MA) families (n = 179 mothers, fathers, and youth; 41% MA) was used to test a bio-psycho-cultural model of the effect of non-responsive parenting on externalizing problems in young adult offspring through the effect on the stress response system. Parenting behavior (acceptance, rejection, harsh discipline) was assessed when children were in late childhood (12-13 years), cortisol samples were collected during late adolescence (18-19 years), and externalizing problems were measured in young adulthood (21-22 years). Latent profile analyses were used to examine patterns of parenting behavior in EA and MA families. A path analysis framework was used to examine how non-responsive parenting interacted with acceptance to predict adolescent stress response and subsequent externalizing problems in EA and MA young adults. Results showed different patterns of parenting behavior in EA versus MA families, with MA families demonstrating a profile of high acceptance and high non-responsiveness at higher rates than EA families. In MA families, youth adherence to the traditional cultural value of *familismo* related to more positive perceptions of parenting behavior. Across ethnic groups, parent rejection only predicted higher externalizing problems in young adults when acceptance was high. The effect of parent harsh discipline on offspring stress response differed by ethnicity. In MA families, harsh discipline predicted dysregulated stress response in youth when acceptance was low. In EA families, harsh discipline did not relate to youth stress response. Overall, results increase the understanding of normative and adaptive parenting behaviors in MA families. Findings inform the development of culturally-competent

parenting-focused interventions that can better prevent dysregulated stress response and externalizing behavior problems in ethnically diverse youth.

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INTRODUCTION

Externalizing behavior problems such as aggression, delinquency, and antisocial behavior in youth have been associated with a myriad of negative outcomes including unemployment and criminal activity (Loeber & Hay, 1997; Stehmmler & Losel, 2012) in adulthood. These problems place great economic strain on the United States, costing society between $335 and $350 billion each year (Miller, 2004). Further, rates of serious problem behaviors in Mexican-American youth, a minority group expected to make up about 25% of the population by 2050 (U.S. Census Bureau), are just as high as rates seen in European-Americans (Jones & Krisberg, 1994; McLaughlin, Hilt, & Nolen-Hoeksema, 2007; Yung & Hammond, 1997). It is therefore important to understand the factors, including cultural factors, which contribute to externalizing behaviors in both European-American and Mexican-American youth populations. Increasing the understanding of the causes of externalizing behavior problems during young adulthood are particularly important, when rates of more extreme forms of aggressive and delinquent behavior tend to increase and trajectories related to future psychopathology become more firmly established (Arnett & Tanner, 2006; Loeber & Farrington, 1998). The current study tests a comprehensive model that may help explain the causes of more serious externalizing problems in an ethnically diverse sample.

Parenting and Externalizing

Parenting styles have been traditionally defined based on two dimensions of parenting behavior: responsiveness and demandingness. Different patterns of responsiveness (i.e., level of parent affection and attentiveness to child's needs) and

demandingness (e.g., level of control, expectations, and enforcement of rules) have been combined to form four distinct styles of parenting (i.e., Authoritarian, Authoritative, Permissive, Rejecting/Neglectful; Baumrind, 1971; Maccoby & Martin, 1983). Studies examining parenting behavior as a potential contributor to externalizing problems in offspring have typically identified elements of parent responsiveness as being the strongest predictors of subsequent problems. Specifically, characteristics of non-responsive parenting behavior (i.e., low warmth, high rejection, harsh discipline/punitive parenting) have been found to increase the risk for externalizing problems in offspring across development in both males and females (Hoeve et al., 2009; Rothbaum & Weisz , 1994; Stormshak, Bierman, McMahon, & Lengua, 2000). Further, one review suggested that engaging in these negative/non-responsive parenting behaviors during later adolescence may be more predictive of externalizing problems in offspring compared to using this type of parenting during younger developmental periods (Rothbaum & Weisz, 1994). This differential developmental influence may be due to the cumulative nature of the non-responsive parenting behaviors (i.e., a measure in later adolescence may represent the accumulation of similar parent strategies throughout childhood). Alternatively, these types of parenting behaviors may be more strongly related to the more aggressive externalizing behavior problems exhibited by older offspring compared to younger offspring who may be engaged in more attention-seeking externalizing behaviors. Regardless, evidence strongly suggests a link between these non-responsive parenting behaviors and adverse child outcomes as they age through adolescence and

enter adulthood, necessitating additional studies that better understand the mechanisms of these effects.

Studies typically have focused on specific elements of responsive/non-responsive parenting behavior (e.g., warmth, rejection, or harsh discipline) and examined how they uniquely influence child adjustment. Certain negative parenting behaviors such as harsh discipline (e.g., yelling, hitting, spanking) are commonly linked to externalizing problems. The mechanisms of this effect have been more extensively studied and are better understood via social learning theory/modeling (e.g., Kim, Hetherington, & Reiss, 1999; Conger, Neppl, Kim, & Scaramella, 2003). Specifically, the parent's aggressive behavior is thought to serve as a model for the child's subsequent externalizing behavior (e.g., Baumrind, 1967). Though the effects of harsh discipline have been extensively studied, it is less clear why other elements of parent non-responsiveness, such as low warmth and high rejection (i.e., cold, neglectful parenting), also predict externalizing behavior problems in offspring (Hoeve et al., 2009; Rothbaum & Weisz , 1994; Stormshak et al., 2000). However, studying the mechanisms of alternate examples of non-responsive parenting individually may not offer the best answer to this question. Children are not exposed to specific parenting behaviors in a vacuum and examining parent non-responsiveness in a more comprehensive manner may increase our understanding of how such negative parenting behavior may contribute to offspring externalizing problems. In other words, the effects of certain types of non-responsive parenting behavior may depend on the context (i.e., the other types of behaviors also being used with the child; Deater-Deckard, Dodge, Bates, & Pettit, 1996) and it is

important to consider a more holistic view of parenting when attempting to understand the effects on the child. Relatedly, the literature has disproportionately focused on mothers' parenting, although fathers have increasingly been found to play an important role in the adjustment of offspring, particularly in the development of externalizing behavior problems (e.g., Williams & Kelly, 2005; Stolz, Barber, & Olsen, 2005). Incorporating father's parenting is important when considering a more comprehensive approach to understanding the effects of non-responsive parenting on child outcomes. Additional research is needed to understand *how* exposure to patterns of parent non-responsiveness by both mothers and fathers, measured comprehensively, (e.g., low warmth, high rejection, high harsh discipline vs. high warmth, low rejection, low harsh discipline, etc.) may affect offspring externalizing problems across development.

Parenting, Stress Response, and Externalizing

The current study tests a comprehensive model that proposes that parent non-responsiveness predicts increased externalizing behavior problems in offspring in young adulthood through its effect on the stress response system (see Figure 2). This model considers the interplay between the physiological and mental health systems in youth and how they may be affected by their family environment. Further, unlike previous studies, the proposed model also accounts for cultural differences which are described in greater detail below. Researchers have recently proposed that risky family environments may negatively impact children's mental health outcomes through their effect on biological stress response systems. Specifically, investigators hypothesized that risky family environments lead to a dysregulated stress response in offspring, which then increases

risk for the development of externalizing problems (Repetti Taylor, & Seeman, 2002; Davies, Sturge-Apple, Cicchetti, & Cummings, 2007). Non-responsive parenting is one aspect of a risky family environment that may increase the risk for negative mental health outcomes through its effects on the biological stress response system. However, aspects of non-responsive parenting that are considered "risky" may differ depending on ethnicity and/or culture. According to emotional security theory, the goal of children's regulatory functioning is to feel secure in their environment (Cummings & Davies, 1996; Waters & Cummings 2000), and exposure to non-responsive parenting behaviors (e.g., low warmth, rejection and harsh discipline) may threaten this security and lead to dysregulation of the stress response system. This theory extends beyond social learning theory/modeling and may help explain the adverse effect of non-responsive parenting behaviors.

Biological stress-response, often measured by cortisol, the end-product of the HPA-axis response to stress, is typically an adaptive function (Nicolson, 2008). However, environmental stressors, such as non-responsive parenting, can lead to dysregulated patterns of cortisol activity (Goldman-Mellor, Hamer, & Steptoe, 2012; Luecken & Lemery, 2004), which has been linked to adverse psychological consequences including externalizing problems and major depressive disorder (Heim,Ehlert, & Hellhammer, 2000; McEwen, 2002). Dysregulated stress response can be characterized by either elevated or blunted cortisol activity. Although studies have traditionally identified elevated cortisol levels to be a result of exposure to environmental stress (e.g., Breier, Kelsoe, Kirwin, Beller, Wolkowirz, & Pickar, 1988; Gunnar & Vazquez, 2001), recent

studies have reported blunted cortisol production as an alternate outcome of early life stress (Heim, et al., 2000; Lovallo Farag, Sorocco, Cohoon, & Vincent, 2012). It may be that the more immediate effect of exposure to an environmental stressor may be heightened cortisol activity, whereas the longer-term effect may be attenuated activity (DeBellis, 2001; Miller, Chen, and Zhou; 2007), though not all studies support this hypothesis (e.g., Miller, Chen, & Parker, 2011). Goldman-Mellor, Hamer, and Steptoe (2012) theorized that the relation between exposure to early life stressors and later stress response in adulthood may be more complicated. In their study of 543 older adults (*M*=63 years), they found that exposure to early life stressors (which included harsh and neglectful parenting as well as more severe stressors like abuse and abandonment) related to later blunted cortisol reactivity, only when there was a comorbid history of psychological distress. Participants with a history of early life stress, but with no psychological distress instead showed elevated reactivity. In general, the long-term effects of more severe types of environmental stressors such as parent abuse and neglect have been shown to be linked with a blunted stress response in offspring (e.g, Debellis, 2001; Miller et al., 2007), which is theorized to be a result of increased allostatic load (McEwen & Wingfield, 2003). Allostasis refers to the idea of biological "set-points" in homeostasis that are altered to generate the physiological resources needed for survival in the face of a stressor. In the case of repeated exposure to non-responsive parenting, the HPA-axis may down-regulate to protect itself from the harm caused by the repeated exposure to environmental stress (Fries Hesse, Hellhammer, & Hellmammer, 2005). As most previous studies have focused on more severe stressors like abuse (e.g., Debellis,

2001) or a mix of stressor-types (e.g., Goldman-Mellor), additional studies are needed to explore the long-term effect of less extreme, but potentially still important environmental stressors like non-responsive parenting, while accounting for factors like psychological distress. The current study examines the long-term effects of non-responsive parenting on offspring stress response and subsequent externalizing problems, controlling for previous levels of externalizing symptoms.

Prospective Studies

Only a handful of studies have examined a model similar to that of the current study, including assessments of parenting, and offspring stress response and externalizing problems. However, none have focused specifically on more comprehensive measures of non-responsive parenting. Davies and colleagues (2007) conducted one of the few longitudinal studies examining the mediating role of dysregulated cortisol reactivity in the relation between interparental conflict and externalizing problems. In their sample of 178 kindergarten children, they found that interparental conflict predicted higher child externalizing symptoms two years after the initial assessment through its effect on diminished stress response. A similar longitudinal study, examining 185 kindergarten children, found two distinct patterns of cortisol reactivity (elevated and blunted), such that only inter-parental conflict perceived by the child to be threatening was linked to elevated stress response and greater externalizing problems in offspring (Koss et al., 2012). Destructive inter-parental conflict (i.e., conflict involving aggression and negativity) was alternatively related to a blunted response. Studying one component of parent responsiveness, parental warmth, O'Neal and her colleagues (2010) investigated

whether the effect of a preventive intervention, targeting parenting warmth, on child aggression was mediated by altered cortisol response. In this sample of 92 pre-schoolers and their parents, the effect of the preventive intervention on reduced child aggression was significantly mediated by increased parental warmth and increased child stress response. The prospective research studies in this area has been conducted entirely with young children. To date, no studies have examined the prospective model looking at the effect of patterns of non-responsive parenting on dysregulated stress response and subsequent externalizing problems in offspring later in development.

Cross-sectional Studies

Studies have typically examined relations between parent non-responsiveness and offspring stress response, and stress response and externalizing problems separately. Multiple studies have shown significant concurrent relations between parental responsiveness and dysregulated stress response in adolescent and young adult offspring (Byrd-Crave, Auer, Granger, & Masey, 2012; Marsman, Nederhof, Rosmalen, Oldehinkel, Ormel, & Buitelaar, 2012). Marsman and colleagues (2012) examined the concurrent relation between perceived parental warmth and rejection and basal cortisol levels in 1,594 adolescents. Results showed that low warmth, but not rejection, was linearly associated with higher basal cortisol levels. Byrd-Craven and colleagues (2012) looked specifically at the father-daughter relationship and how non-responsive parenting behaviors were related to daughter's cortisol activity in early adulthood. In a sample of 88 female undergraduates, they found that higher levels of non-responsive parenting (i.e., rejection and control) were related to higher levels of pre-stress-task cortisol. The

concurrent measurement of parenting behavior and cortisol has implications for the type of cortisol dysregulation that would be expected in offspring (e.g., exaggerated cortisol activity is more likely to be found with concurrent measurement of environmental stressor and stress response; Miller et al., 2007) and it is therefore unclear whether a similar parenting behavior would have a distinct longer-term effect on the stress response system. Evans and colleagues (2007) examined maternal responsiveness as a moderator of the effect of environmental stress (e.g., housing problems, family turmoil) on allostatic load (measured using cortisol, blood pressure, and urinary cathinone biomarkers) in young adolescent offspring (Evans, Kim, Ting, Tesher, & Shannis, 2007). Results showed that environmental stress related to high allostatic load only when maternal responsiveness was low. Similarly, the use of a concurrent study designs limits the ability to draw causal inferences from these results.

Other studies that have examined the link between dysregulated stress response and externalizing behavior problems have been cross-sectional. Investigators typically find blunted cortisol activity in young adults with externalizing problems (e.g., Lahey, McBurnett, Loeber, & Hart, 1995; Luecken et al., 2010; Van Goozen, 2005; Van Goozen, Fairchild, Snoek, & Harold, 2007), though it is unclear whether the dysregulated cortisol contributed to the externalizing problems or vice versa. In one of the few studies to examine the relations between parent non-responsiveness, cortisol, and externalizing symptoms, Luecken and colleagues (2013) examined the long-term effects of a preventive intervention for bereaved families on offspring cortisol and externalizing symptoms in late adolescence in 139 families (Luecken, Hagan, Sandler, Tein, Ayers, &

Wolchik, 2013). The parent component of this intervention had a significant focus on parental warmth and discipline. Luecken at al. (2013) found that the intervention effect to increase cortisol activity was partially mediated by intervention effects on reduced externalizing symptoms, although the examination of mediation was concurrent, thus limiting possible conclusions about the direction of the effects.

According to the attenuation hypothesis, it is theorized that individuals with blunted cortisol responses to stress may either seek out riskier situations in order to elicit a stronger response and/or may not be as adversely affected by risky situations (Susman, 2006). However, this theory cannot account for which came first, the dysregulation or the behavior problems. Further, the majority of the prospective and retrospective studies described earlier hypothesized and concluded unidirectional pathways from non-responsive parenting behaviors to dysregulated cortisol to offspring externalizing problems, and did not consider possible alternative directions of effect. The current study incudes a more rigorous test of the proposed model, controlling for some alternative pathways, to better understand the mechanism of the effect of parent non-responsiveness on offspring externalizing behavior.

Parenting in Mexican-American Families

When investigating the causes of externalizing problems in youth, it is important to include Mexican-American (MA) youth for several reasons. As stated earlier, MAs comprise the largest minority group in the United States and are expected to make up about 25% of the population by 2050 (U.S. Census Bureau). Further, MAs exhibit a rate of serious behavior problems (e.g., antisocial and delinquent behavior, criminal activity)

similar to or greater than European-American (EA) youth (e.g., Jones & Kriber, 1994; Yung & Hammond, 1997). These rates may depend on level of acculturation, with numerous studies showing higher rates of externalizing behavior problems in U.S. born and more acculturated Mexican-American youth compared to less acculturated peers (Escobar, Nervi, & Gara, 2000; Gonzales, Knight, Morgan-Lopez, Saenz, & Sirolli, 2002; Gonzales et al., 2008). Increased levels of acculturation with the host American culture may increase the risk for externalizing problems due to acculturative stress, easier access to risky situations, or diminishing protective factors associated with traditional cultural values. Therefore, cultural values must be considered when investigating a model that may better explain the etiology of serious externalizing behavior problems.

The majority of studies examining the effect of parent responsiveness and/or stress response on externalizing problems have focused on EA samples or included mostly EA youth; therefore, it is unknown whether similar patterns occur in MA families. Further, independent from the effects of parenting behavior, studies have pointed to differences in daily cortisol patterns between MA and EA youth (Martin, Brue, & Fisher, 2012). Specifically, preadolescent Latinos have been found to exhibit flatter evening cortisol slopes compared to EA youth, after controlling for possible confounding variables such as socio-economic status (SES) and parenting quality.

There is also evidence to suggest that parenting behavior of MAs may be both descriptively unique and have differential influence on youth outcomes from that of EAs, which may have implications for subsequent effects on offspring physiological and mental health. Put another way, the "risky" environment may look different for MA

compared to EA families. MA parents tend to exhibit more behaviors characteristic of non-responsiveness (i.e., rejecting behaviors and use of harsh discipline) compared to EA parents (e.g., Cardona, Nicholson, & Fox, 2000; Knight, Virdin, & Roosa, 1994; Varela et al., 2004). However, despite this elevated rate of supposedly negative parenting behavior in MA families, MA youth do not have dramatically higher rates of externalizing problems compared to EA youth (e.g., Escobar et al., 2000). It may be that some aspects of parent non-responsiveness may not be as detrimental in MA families as in EA families. Previous studies that have classified MA parents as more authoritarian have applied traditional parenting style categories (e.g., authoritarian, authoritative), though these styles may not be a good fit for MA parents. For example, MA parents may be classified as more authoritarian based on their increased use of harsh parenting strategies, yet they may be high in accepting behaviors as well, which would not fit with traditional definitions of "authoritarian" parenting (Hill, Bush, & Roosa, 2003; Knight et al., 2004; White, Zeiders, Gonzales, Tein, & Roosa, 2013). Researchers have theorized that the use of harsh discipline strategies among MA parents may be used to instill traditional cultural values such as *familismo* in children, but parents may still use other responsive parenting strategies such as high parental warmth (Calzada, Fernandez, & Cortez, 2010). While investigators have studied cultural explanations for these differences in parenting in both preschoolers and adolescents (e.g., Calzada et al., 2010; Gonzales et al., 2011), given that non-responsive parenting behaviors are consistently linked with poor child adjustment outcomes, researchers have not yet examined mechanisms that account for the differential effect of similar parenting strategies on

offspring from diverse ethnic groups. The current study examines whether similar patterns of parenting practices differentially affect offspring stress response and externalizing problems in MA and EA youth, at later stages in development when externalizing problems become more serious.

Effects of Traditional Cultural Values

There is evidence that parenting practices may be interpreted differently by youth depending on ethnicity, level of acculturation, and adherence to traditional cultural values (Crockett et al., 2007; Lansford et al., 2005; Luis, Varela, & Morre, 2008), which may result in differential effects on adjustment (Parke et al., 2004). For example, harsh discipline (e.g., spanking) does not have the same detrimental effect on child outcomes in African-American youth compared to EA youth (Deater-Deckard et al., 1996). Traditional cultural values that are particularly salient for MA families are *familismo* and *respeto*. *Familsmo* refers to the value of being family-oriented and emphasizes close family relationships and family interdependence (Cortez, 1995). *Respeto* refers to the importance of respecting hierarchical relationships defined by age, gender, of social status (Harwood, Leyendecker, Carlson, Asencio, & Miller, 2002). Level of adherence to traditional cultural values such as *familismo* and *respeto*, may affect offspring perception of non-responsive parenting behavior and its effects on mental and physical health. MA offspring adhering to more traditional cultural values may prioritize family (e.g., family obligations and responsibilities) and respecting their parents above themselves and be less adversely affected by rejecting/harsh parent behavior which tends to be more individually-directed. Offspring less adherent to traditional cultural values may show

effects similar to EA families as they may experience more distress as a result of such individually-directed non-responsive parenting.

Previous studies have tended to focus on acculturation, defined as the transition from one's home culture to the culture of a host country (Escobar, Costanza, & Gara, 2000) rather than on traditional MA values. While it is important to note that acculturation and traditional cultural values are not mutually exclusive, such that one or both can be high (Gonzales et al., 2002), many researchers have focused on acculturation in a way that suggests low acculturation relates to high traditional cultural values. For example, Parke and colleagues (2004) found that rejection by fathers was less detrimental to child adjustment in MA families compared to EA families, but this relation was moderated by parent acculturation such that ethnic differences were only evident in less acculturated MA families. Hill and colleagues (2003) examined the effects of mother acceptance and hostile control on child conduct problems and found a significant interaction between acceptance and acculturation (measured by language), such that maternal acceptance had a stronger inverse relation with child conduct problems when mothers were less acculturated (Hill, et al., 2003). Less acculturated mothers also tended to use more hostile control strategies, suggesting a complex relation between maternal parenting strategies and child adjustment in MA youth at various levels of acculturation. Though previous research has tended to focus on the effects of acculturation (often measured just by language), traditional cultural values such as *familismo* and *respeto* are being increasingly considered separately (e.g., Gonzales, German, & Fabrett, 2012; Rodriguez, Mira, Paez, & Myers, 2007). These constructs are particularly important in

this context as youth acculturation to the majority culture does not necessarily mean the abandonment of one's traditional culture (Gonzales et al., 2002). Given that the adherence to traditional cultural values may be protective against the negative effects of non-responsive parenting, the current investigation examines how youth adherence to traditional cultural values relates to perception on parenting behavior. When examining ethnic differences, it is important to account for SES as it is commonly confounded with ethnicity and culture. Often, culture is used to explain differences seen between EA and MA populations, when in fact differences may instead be due to variations in SES (e.g., Roosa, Morgan-Lopez, Cree, & Specter, 2002). Specifically, MA families tend to be of lower SES compared to EA families and lower SES has been linked with greater externalizing problems, elevated stress response, and less optimal parenting behaviors in part due to the greater incidence of environmental stressors and decreased available resources to help cope (e.g., Evans & English, 2002; Lupien, King, Meaney, & McEwen, 2001). SES may also have a unique relation with parenting, stress response, and externalizing problems in an MA population such that SES may be related to variables such as neighborhood context which may create additional disadvantages (e.g., high crime, high disorganization) that predict both more non-responsive parenting and more adverse child outcomes (Gonzales et al., 2011). Therefore, the current model examining the relations between negative parenting, stress response, and offspring externalizing considers the effect of SES, particularly when comparing EA and MA families.

Proposed Study

The current study tests three primary aims in order to better understand how non-responsive parenting may predict externalizing symptoms and whether this process differs in EA versus MA youth (see theoretical model - Figure 2). First, it used a person-centered approach to identify patterns of parent non-responsiveness within EA and MA families. This approach does not restrict the patterns of parenting to the previous parenting styles typically tested with EA samples. It was hypothesized that new patterns would emerge in MA families that are inconsistent with traditional definitions of parent responsiveness in authoritative/authoritarian parenting (specifics provided below). Second, it examined a prospective model to test whether the effect of parent non-responsiveness (rejection or harsh discipline) in late childhood on offspring externalizing problems in young adulthood is mediated by stress response in late adolescence, and compares whether this model applies for both EA and MA families. It was hypothesized that in EA families, parent non-responsiveness (rejection and harsh discipline) would significantly predict higher externalizing problems in young adult offspring and be significantly mediated by blunted stress response in late adolescence. However, in MA families, it was expected that parent acceptance would be protective against the negative effects of non-responsive parenting behavior. Specifically, it was hypothesized that the unique patterns of parenting behavior would be protective in that parent non-responsiveness would only lead to blunted stress response and subsequent externalizing problems when parent acceptance was low. The third aim further explored how this

model applies to MA families, considering possible cultural differences. Specifically, the current study examined how youth traditional cultural values relate to youth perceptions of parenting behavior. It was hypothesized that adherence to traditional cultural values (i.e., *familismo)* would relate to perceptions of higher acceptance and lower rejection and harsh discipline.

This is the first study to examine a prospective model with both EA and MA offspring at a later developmental period. Increasing the understanding of whether non-responsive parenting strategies differentially affect MA versus EA offspring's physiological and mental health outcomes can help to inform culturally-sensitive prevention and intervention programs. It may be that current programs are targeting similar parenting behaviors to affect change in offspring outcomes, though they may be able to have more beneficial results with more tailored approaches. Because MAs represent the fastest growing minority group in the United States and exhibit high rates of externalizing behavior problems, understanding the processes that lead to externalizing problems can inform efforts to reduce the societal burden associated with youths' externalizing problems.

METHOD

Design Overview

The current study uses data from the Parent and Youth Study (PAYS), a longitudinal study that employed a cohort sequential design. PAYS recruited families from two metropolitan areas: Phoenix, AZ, by the Prevention Research Center at Arizona State University and Riverside, CA by the Department of Sociology at University of

California, Riverside. EA and MA mothers, fathers, and youths were assessed across 5 waves of data collection (late childhood - 12-13 years - through young adulthood- 21-22 years). When possible, data were collected using a multi-informant, youth- (Y), mother- (M), and father- (F) report, and multi-method, (interview and saliva samples) approach. Data from waves 1, 4, and 5 were used.

Participants

The current study includes the two-parent families subsample from the PAYS study (*n* = 179), which includes continuously married EA (*n* = 95) and MA (*n* =84) mothers, fathers, and youth. Divorced families were excluded from the current project as children from these families may have been exposed to additional stressors (e.g., interparental conflict) that could confound the effects of nonresponsive parenting behavior on stress response and externalizing problems (e.g., Davies et al., 2007; Martinez & Forgatch, 2002). The EA and MA families in the study sample (n = 179), considered separately, are comparable to the general population based on demographic variables including income, education, and language preference (U.S. Department of Education, National Center for Education Statistics, 2000).

Procedures

Bilingual (English-Spanish) interviewers collected data according to participant language preference when youth were in 7th grade (Wave 1), 8th or 9th grade (Wave 2), 10th grade (Wave 3), age 19 (Wave 4), and age 21-22 (Wave 5). Retention rates remained high across waves of data collection; 98% was retained at Wave 2 and 91% of the study sample was retained at Wave 5. Interviews were conducted either in home or by

phone. Interviewers read questions aloud and used computerized data input systems. Participants each received $100 per interview at each time point.

Measures

Acceptance/Rejection

(M, F, Y - Wave 1) Parent acceptance and rejection were measured using the two 10-item Acceptance and Rejection subscales of an adapted version of the Children Report of Parenting Behavior Inventory (CRPBI; Schaefer, 1965). The subscales were shortened from the original 16-item scales using results of the descriptive statistics of the items, internal consistency (alpha) and confirmative factor analysis. To minimize reporter bias, mothers reported on father behavior, fathers reported on mother behavior, and youth reported on both. Sample items from the Rejection subscale include mother/father "acted as though child was in the way" and "often blew his/her top when child bothered him/her." Sample items from the Acceptance subscale include mother/father "understood my problems and worries" and "smiled very often." The CRPBI has adequate reliability and validity (Fogas, Wolchik, & Braver, 1987) and reliability was acceptable in the current sample (α ranged from .73 to .88). The CRPBI subscales being used in the current study has previously been found to be equivalent across EA and MA families (Knight, Tien, Shell, & Roosa, 1992). Because the current study is interested in the effects of parenting in late childhood/early adolescence on subsequent stress response dysregulation and externalizing problems, Wave 1 measures, collected when youth were in 7th grade (12-13 years), were used.

Harsh Discipline

(M, F, Y - Wave 1) Harsh discipline was measured using a modified version of the Parent-Child Conflict Tactics scale (Straus, Hamby, Finkelhor, Moore, & Runyan, 1998). The original scale was adapted to include only 4 items capturing harsh discipline tactics (e.g., yelling, hitting, etc.). For this measure, mothers and fathers reported on themselves and youth reported on mother and father. One sample item is "How often did mother/father shout at, yell at, scream at, or curse at you." Previous studies have shown evidence of discriminant and construct validity (Straus et al., 1998). Reliability was acceptable (α ranged from. 66 to .69).

Externalizing Problems

(M, F, Y– Waves 1, 5) Youth externalizing problems were measured using the 35-item externalizing subscale of Achenbach's Child Behavior Checklist (Achenbach, 1991). The reliability and validity of this subscale are acceptable (Achenbach & Edlebrock, 1981). At Wave 1, mothers and fathers reported on youth's behavior problems. Reliability ranged from α = .82 to .86 for mother and father reporters. At wave 5, externalizing problems were measured using young adults' self-report of the externalizing subscale on the Adult Self Report (ASR; Achenbach & Rescorla, 2003). The ASR incorporated many items from the earlier Achenbach measures and was based on national norms spanning ages 18-59. Reliability was .84.

Stress Response

(Y - Wave 4) Cortisol samples were taken between 6:00pm-10:00pm during a modified Trier Social Stress Task (Kirschbaum, Pirke, & Helhammer, 1993) that included a three-

minute mental arithmetic task that required YAs to perform serial subtraction aloud, starting from a new number each minute. The task was adjusted for difficulty and was timed to add more pressure (Cacioppo et al., 1995). This task was followed by a four-minute videotaped speech task about personal strengths and weaknesses which participants were told would be evaluated by a panel of psychologists (van Eck, Nicolson, Berkhof, & Sulon, 1996). This stress task has been shown to induce significant cortisol responses in children and young adults (Yim, Quas, Cahill, & Hayakawa, 2010). Youth were instructed to refrain from exercise and consumption of food, alcohol and caffeine two hours prior to the task. Saliva samples were collected at four periods: before the tasks (P1), immediately after the tasks (P2), and again 20 minutes (P3) and 40 minutes later (P4).

Cortisol values were analyzed using the trapezoidal method was to calculate total cortisol output across the stress task using area under the curve with respect to ground (AUCg; Pruessner, Kirschbaum, Meinlschmid, & Hellhammer, 2003). AUCg captures the total cortisol ouput across the stress task and is a meaningful measure of cortisol response to a challenge (Nicolson, 2008). Calculations of AUCg were adjusted for time across the stress task. Based on recommendations by Nicolson (2008), cortisol values were checked for non-normality and were adjusted if necessary.

Traditional Cultural Values (Y – Wave 1, MA sample only) Youth completed the 14-item *familismo* subscale from the Mexican American Acculturation/Enculturation Scale (MACV; Knight, et al., 2010; Sabogal, Marin, Otero-Sabogal, Marin, & Perez-Stable, 1987). The *Familismo* scale includes 3 subscales: family as a source or support, family as

referent, and obligation to family. Sample items include "It is always important to be united as a family" and "It is important to work hard and do your best because your work reflects on the family." Previous research supports the construct validity of this measure (Knight et al., 2010) and reliability was acceptable (range α = .61 - .77).

Covariates

Youth *gender* may be related to parent non-responsiveness (e.g., parents tend to use more harsh discipline strategies with male children compared to females, McKee et al., 2007) and cortisol levels (e.g., higher cortisol levels are seen in post-puberty females compared to males or pre-puberty females, Netherton, Goodyer, Tamplin, & Herbert, 2004; adolescent and young adult males show greater reactivity to the TSST compared to females, Bouma, Riese, Ormel, Verhulst. & Oldehinkel, 2009.). Further, rates of externalizing problems differ by gender, with males exhibiting greater rates of externalizing behaviors compared to females throughout development (Hicks et al., 2007). Therefore, youth gender (binary 0=male, 1=female) was included in all models as a covariate. In addition, *SES*, represented by a 2-item measure of economic hardship at Wave 4 (sample item "How much difficulty have you had paying your bills?") was examined as a covariate. Economic hardship, as opposed to traditional measures of SES such as income, was selected as it has been shown to better capture the subjective experience of poverty, particularly in minority populations (Gonzales et al., 2010; Roosa, Deng, Nair, & Burrell, 2005). This measure has been found to have construct validity and measurement equivalence for English and Spanish-speakers (Barrera, Caples, & Tein, 2001). Finally, the following variables were measured and examined as potential

covariates given their potential to influence cortisol levels: YA age, use of oral or hormonally-based contraception, use of medications, smoking status, caffeine intake, exercise, and time of day when cortisol samples were taken (Kudielka, Hellhammer, & Wust, 2009; Nicolson, 2008).

Data Analyses

Preliminary Analyses

Measurement equivalence was examined for Wave 1 measures of parent non-responsive behavior. Specifically, to assess whether the underlying constructs of each measure were equivalent among EA and MA participants, preliminary analyses first confirmed that measure items similarly load on latent constructs (weak invariance) and that subscales of the latent factors correlate with approximately equal magnitude and in the same direction (Knight et al, 1992). Requirements for equivalent intercepts across measures (strong invariance) were not tested as EA vs. MA differences in parenting variables are hypothesized in the current study. Chen's (2007) guidelines for assessing goodness of fit in measurement invariance testing were used. Specifically, from configural to weak invariance tests, a change in CFI < -.005 or -.010, RMSEA of > .010 or .015, and SRMR > .025 or .030 were used to determine whether the scale remained invariant across groups. Multivariate outlier analyses, using DFFITS, DFBETAS, Cook's distance as criteria (Neter, Wasserman, & Kutner, 1989), were conducted to identify potential influential cases. Further, cortisol data were cleaned to remove participants with abnormal cortisol levels or participants taking medication likely to affect stress response (e.g., hypothyroid medication). Descriptive statistics (Table 1) examined skewness and

kurtosis of study variables to determine whether values need to be adjusted for non-normality (skewness cut-off - 2.0 and and kurtosis cut-off - 7.0; West, Finch, & Curren, 1995). Cortisol values were normally distributed and were therefore not log-transformed.

Identification of covariates

The following variables were examined as potential covariates related to cortisol: YA age, YA gender, economic hardship, use of oral or hormonally-based contraception, use of medications, smoking status, caffeine intake, exercise, and time of day when cortisol samples were taken (Kudielka, Hellhammer, & Wust, 2009; Nicolson, 2008). Bivariate correlations between these variables and the five cortisol measures (i.e., four cortisol periods [P1,P2,P3, P4] and AUCg) were computed to identify variables that were significantly ($p < .05$) related to the cortisol measures (Table 2). In addition, repeated measures general linear model (GLM) was used to examine relations between covariates and cortisol slope and reactivity. Time of day was negatively related to all cortisol measures (all r's $\leq$ -.28, $p < .01$). Gender (1 = male, 2 = female) was significantly to P1 cortisol ($r = -.18$; $p < .05$) and significantly predicted cortisol slope ($F = 5.04$, $p < .05$). Age was significantly related to P2 cortisol ($r = -.19$; $p < .05$). Therefore, these three variables were entered into statistical models as covariates.

Aim 1

To examine and compare patterns of parent non-responsiveness between EA and MA parents, mother, father and youth report of mother and father acceptance, rejection, and harsh discipline were used to create profiles of parent non-responsiveness using latent profile analysis (LPA), a person-centered approach. This allowed groups with similar

parenting behavior patterns to emerge from the data without forcing them into predetermined classifications (Bergman, 2001). In contrast to the traditional variable-centered approach, this approach does not force families into traditional categories of parenting styles. Reports of mother and father parenting behavior were used as separate indicators in order to provide a more complete picture of youth exposure to parent non-responsiveness.

Specifically, LPA was used to identify groups of families with similar patterns on the three parenting variables (acceptance, rejection, harsh discipline). First, a single solution model was run (independent means model), followed by models with an increasing number of profile solutions (up to five) to determine the best model fit. Power in LPA is based primarily on the distance between the profile groups (Tein, Coxe, & Cham, in press). If the distance between profiles is large, power subsequently depends on number of indicators and, to a lesser degree, sample size. Ten indicators have been found to have adequate power to detect groups in a sample of 250 (Tein et al., in press), therefore all available indicators (i.e.., mother, father, and child-reports of parent acceptance, rejection, and harsh discipline) were considered when creating the profiles (see Figure 1). Based on previous literature, four profiles of parent non-responsiveness are expected: 1). High acceptance, low rejection, low harsh discipline, 2). Low acceptance, high rejection, high harsh discipline, 3). High acceptance, high rejection, high harsh discipline, and 4). Low acceptance, low rejection, and low harsh discipline. Chi-squared cross-tab analyses were used to compare proportions of parenting profiles

across ethnicity. It was hypothesized that MA families would show significantly more patterns consistent with profile 3 compared to EA families.

Aim 2

Because the LPA results did not produce sufficient variability in the patterns of parenting styles to create adequately sized groups for subsequent analyses, patterns of parenting were examined using the continuous variables of acceptance, rejection, and harsh discipline. To test whether the hypothesized prospective model (Figure 2) applies to both the EA and MA groups, analyses compared the fit and parameter estimates of two stacked path models. The models tested the effects of patterns of parenting (Acceptance and Rejection/Harsh Discipline at Wave 1) on offspring externalizing problems in young adulthood (Wave 5) and whether the effects are mediated by offspring stress response (Wave 4). To compare model fit, models were first allowed to freely estimate parameters and model fit indices. Next, to compare the strength and direction of the parameter estimates of individual paths, paths were constrained to be equal in the two models and then freed one at a time to determine measurement invariance between the EA and MA groups. If EA and MA models were not significantly different, the model was re-run with the entire sample. If patterns of parenting were found to significantly relate to stress response, and stress response was found to significantly relate to externalizing problems (in either the full sample or subsample groups), mediation was tested within each model using the bootstrapping method (Fritz & MacKinnon, 2002). With this method, assuming moderate effect sizes, a sample size of approximately 200 should produce adequate power (Fritz & MacKinnon, 2007).

As described earlier, continuous variables of acceptance, rejection, and harsh discipline were used to capture aspects of non-responsive parenting behavior. Correlations among mother, father, and child-report were examined to determine which reporter or combination of reporters should be used for the analyses. Path analyses examined the interaction between acceptance and rejection, and acceptance and harsh discipline in separate models to evaluate how the combination of these parenting behaviors may function differently to predict dysregulated stress response and subsequent externalizing problems in EA and MA families (see Figure 2). Time of cortisol assessment and other variables (i.e., YA age and gender) found to relate to cortisol measures were included as covariates of stress response. Baseline externalizing problems was entered to control for externalizing problems in young adulthood in the models.

It was hypothesized that parent rejection would relate to higher externalizing problems in young adulthood, and be significantly mediated by blunted stress response in the EA group. However, in the MA group, it was hypothesized that there would be a significant interaction between parent acceptance and rejection, such that parent rejection would only predict blunted stress response when parent acceptance was also low. Similar results were expected for the interaction between acceptance and harshdiscipline. Power (.80) to detect medium sized effects in these path analyses was examined using Monte Carlo simulations in MPlus (Muthén & Muthén, 2002). It should be noted, however, that moderator/interaction effects tend to be small (e.g., only explaining 1-3% of the variance). Thus, the current study may be underpowered to detect these small effect sizes (McClelland & Judd, 1993).

Aim 3

Because relations between parenting and subsequent physiological and mental health outcomes were hypothesized to differ by ethnicity, it is important to understand how cultural variables may help explain these differences. To examine how youth traditional cultural values in the MA group may influence how youth perceive behavior in their parents, bivariate correlations examined the relations between child-report of parenting variables and *familismo.* It was expected that level of traditional cultural values would significantly relate to higher parent acceptance and lower rejection and harsh discipline.

RESULTS

Preliminary Analyses

Measurement Invariance Testing

Six separate series of measurement invariance analyses were conducted to examine measurement equivalence on the following subscales: Father Acceptance/Rejection – reported by mother, Mother Acceptance/Rejection – reported by father, Father Acceptance/Rejection – reported by child, Mother Acceptance/Rejection – reported by child, Mother/Father Harsh Discipline – self report, Mother/Father Harsh Discipline – child report. Because some ethnic differences in parenting measures were anticipated based on the study hypotheses, a conservative approach was used when determining whether to eliminate items from pre-established scales. Specifically, items not found to load equally on subscales across the two groups were examined individually to determine whether a plausible explanation existed for group differences. If the difference was

theorized to be a result of translation error (based on consultation with native Spanish-speakers), the item was dropped from the scale. If instead, there seemed to be a theoretical reason for ethnic differences (e.g., differences in variation across groups), then the item was included, and partial invariance was then tested with the item allowed to be freely estimated across groups (Pina, Little, Knight, & Silverman, 2009). These analyses were conducted in order to ensure appropriateness of comparisons across EA and MA groups in primary analyses.

Father Acceptance/Rejection – reported by mother

As shown in Table 3, the initial configural model of the father acceptance/rejection subscales showed adequate fit across ethnic group [CFI = 0.88, RMSEA = .07, SRMR = .07]. Configural fit was also evidenced by significant standard factor loadings $\geq .29$ for all items on their corresponding factors. A subsequent weak invariance test constraining factor loadings across ethnic group showed a non-significant change in goodness of fit [$\Delta\chi^2$ (18) = 24, p =.15; ΔCFI = .003, ΔRMSEA = 0.001, ΔSRMR = 0.015], suggesting evidence of factor loading invariance.

Mother Acceptance/Rejection – reported by father

The initial configural model of the mother acceptance/rejection subscales showed adequate fit across ethnic group [CFI = 0.85, RMSEA = .07, SRMR = .08]. Two items (item 9- "Mother forgot to help child when he/she needed help" and item 30- "Mother acted as though child was in the way") significantly loaded on the scale of mother rejection in the EA group, but not in the MA group. Item 30 was eliminated due to a possible translation error (i.e., "en su camino" is a very literal translation, meaning that

the child is literally in your path). However, item 9 was retained due to possible differences in variation related to external stressors faced by the family. Significant standard factor loadings ≥ .22 were found for all remaining items on their corresponding factors in both groups. Next, we examined a partial-weak invariance model constraining most factor loadings across ethnic group, but allowed item 9 to vary across ethnic group. As shown in Table3, this test showed a non-significant change in goodness of fit [$\Delta\chi^2$ (50) = 66, p =.06; ΔCFI = .013, ΔRMSEA = 0.002, ΔSRMR = 0.019], suggesting evidence of partial factor loading invariance.

Father Acceptance/Rejection – reported by child

The initial configural model of the father acceptance/rejection subscales showed adequate fit across ethnic group [CFI = 0.83, RMSEA = .08, SRMR = .08]. One item (item 22- "Father didn't get child things unless he/she asked for them over and over again") significantly loaded on the scale of father rejection in the MA group, but only marginally (p=.06) in the EA group. Because of the marginal value, item 22 was retained. Significant standard factor loadings ≥ .28 were found for all remaining items on their corresponding factors in both groups. Next, we examined a partial-weak invariance model constraining most factor loadings across ethnic group, but allowed item 22 to vary across ethnic group. As shown in Table 3, this test showed a non-significant change in goodness of fit [$\Delta\chi^2$ (77) = 86, p =.23; ΔCFI = .02, ΔRMSEA = 0.00, ΔSRMR = 0.016], suggesting evidence of partial factor loading invariance.

Mother Acceptance/Rejection – reported by child

The initial configural model of the mother acceptance/rejection subscales showed adequate fit across ethnic group [CFI = 0.88, RMSEA = .07, SRMR = .07]. Configural fit was also evidenced by significant standard factor loadings ≥ .23 for all items on their corresponding factors. A subsequent weak invariance test constraining factor loadings across ethnic group showed a non-significant change in goodness of fit [$\Delta\chi^2$ (18) = 20, p =.33; ΔCFI = .001, ΔRMSEA = 0.001, ΔSRMR = 0.016], suggesting evidence of factor loading invariance.

Mother/Father Harsh Discipline – self report

The initial configural model of the mother/father harsh discipline subscales showed adequate fit across ethnic group [CFI = 0.92, RMSEA = .09, SRMR = .07]. One item on the father self-report (item 4- "In the past year, how often did you hit, slap or strike child") significantly loaded on the scale of father harsh discipline in the EA group, but not in the MA group. This item was retained because the current study theorizes that harsh discipline may function differently in EA verses MA ethnic groups. Significant standard factor loadings ≥ .35 were found for all remaining items on their corresponding factors in both groups. Next, we examined a partial-weak invariance model constraining most factor loadings across ethnic group, but allowed item 4 to vary across ethnic group. As shown in Table 3, this test showed a non-significant change in goodness of fit [$\Delta\chi^2$ (8) = 8.5, p =.38; ΔCFI = .01, ΔRMSEA = 0.007, ΔSRMR = 0.019], suggesting evidence of partial factor loading invariance.

Mother/Father Harsh Discipline – child report

The initial configural model of the mother/father harsh discipline subscales showed adequate fit across ethnic group [CFI = 0.97, RMSEA = .10, SRMR = .05]. One item on the mother scale (item 3- "In the past year, how often did mother push or shove you or threaten to hurt you?") significantly loaded on the scale of mother harsh discipline in the EA group, but not in the MA group. This item was retained because the current study theorizes that harsh discipline may function differently in EA verses MA ethnic groups. Significant standard factor loadings ≥ .30 were found for all remaining items on their corresponding factors in both groups. Next, we examined a partial-weak invariance model constraining most factor loadings across ethnic group, but allowed item 3 to vary across ethnic group. As shown in Table 3, this test showed a significant change in goodness of fit [$\Delta\chi^2$ (10) = 50.9, $p < .001$; ΔCFI = .06, ΔRMSEA = 0.03, ΔSRMR = 0.04], thus not supporting partial factor loading invariance. The child reports of mother and father harsh discipline, therefore, were not included in the LPA analyses. Child-reports of mother and father harsh discipline were retained for analyses in Aim 2 and 3 which did not use the LPA findings. However, because these scales did not meet criteria for measurement invariance across the EA and MA families, the groups could not be compared directly in such analyses.

Cortisol Cleaning

One-hundred-thirty YAs completed the cortisol task. Cortisol values from 12 YAs were excluded from the current analyses and set as missing due to reasons listed below. First, cortisol variables were examined to identify participants with impossible or extreme

scores. Three YAs, whose cortisol values were greater than 4 standard deviations above the mean of the data, were excluded. Next, the data were examined looking for the following medications that have been shown to be related to cortisol output and reactivity (i.e., systemic glucocorticoids, anticonvulsants, hormone replacement medications, beta blockers, and steroids; Nicolson, 2007). Data for five YAs were set as missing due to stimulant, steroid, or thyroid medications. Additionally, four YAs did not complete both stress tasks and were set as missing. T-tests and chi-squared tests were run to compare the 49 YAs who did not participate in the Wave 4 assessment to the 130 who completed the cortisol task on demographic and study variables. Results showed that there was a marginally greater proportion of females in the YAs who participated ($X^2 = 2.96$, p = .09). No demographic or study variables were significantly different between the two groups.

The analysis was based on 179 YAs, using FIML missing data technique (Enders, 2010) to account for the missing data. The data included the 118 YAs who had cortisol data included in the current analyses and the remaining 12 YAs with excluded cortisol values and 49 who did not complete the task either due to rejecting to participate in cortisol collection (n = 32) or not participating in Wave 4 (n = 17) .

Regression diagnostics

Regression diagnostics for outliers were conducted using separate regression equations with AUCg and externalizing problems at Wave 5 as the dependent variable. One regression equation contained child-report of parent acceptance and child-report of parent rejection, and the interaction between the two, as predictors of AUCg, adjusting for four covariates (time of day, age, and gender, and ethnicity). Outliers in a similar equation

including child-report of parent acceptance and harsh discipline, and the interaction between the two, as predictors of AUCg were also examined. The final regression equation contained the AUCg as the predictor of externalizing symptoms, adjusting for four covariates (time of day, age, and gender, and ethnicity). DFFITS, a measure of the influence of individual cases on the regression equation, and DFBETAS, a measure of the change in regression coefficients, were examined to identify potential outliers (Cohen, Cohen, West & Aiken, 2003). Cases were considered influential if the absolute value of DFFITS exceeded 1 or DFBETAS was greater than 1(Neter, Wasserman, & Kutner, 1989). No cases appeared to influence the regression of parenting variables on cortisol nor the regression of cortisol on externalizing problems.

Descriptive Statistics

Table 4 shows descriptive statistics for study variables by ethnicity. T-tests were run to examine significant differences between EA and MA families. Results showed that father rejection and mother rejection according to child-report were significantly higher in the MA sample compared to the EA sample ($t = -3.47$, $p < .01$) and ($t = -2.60$, $p < .01$), respectively. In addition, father-report of mother rejection was marginally higher in the MA sample compared to the EA sample ($t = -1.81$, $p < .10$). Child-report of mother acceptance was marginally higher in the EA sample compared to MA sample ($t = 1.71$, $p < .10$). Finally, child-reports of mother and father harsh discipline were marginally higher in the MA sample compared to the EA sample ($t = 1.63$, $p < .10$) and ($t = -1.71$, $p < .10$) respectively.

Primary Analyses

Aim 1

Based on the results of the measurement invariance testing, child report on mother and father use of harsh discipline were excluded from latent profile analyses. A modified version of the father-report of mother rejection and mother-report of father rejection were included (dropping the single mistranslated item). A series of latent profile analysis (LPA) models of non-responsive parenting with an increasing number of profiles/classes was tested for overall model fit (see Table 5). Multiple indicators of model fit were used to determine the best solution: log likelihood, AIC, BIC, SABIC, and the LMR adjusted LRT Test. Because models would not converge with the inclusion of child-report of mother's rejection in the model, this subscale was dropped. Therefore, these nine indictors: two reports of father acceptance (M, C), two reports of father rejection (M,C), one report of mother acceptance (C), two reports of mother rejection (F, C), and one report of mother harsh discipline (M) and one report of father harsh discipline (F) were used as indicators for the profiles.

A four class solution (Log Likelihood = -3923.14; AIC = 7968.27; BIC – 8174.16; SABIC – 7980.86) was determined to fit the data best based on fit indices that were closer to zero, and classes that were further apart on the indicator means and best differentiated between patterns of non-responsive parenting behavior. Figure 3 shows the four class solution. Class 1, consisting of 10% (n = 18) of families, shows relative to the other profiles, moderate acceptance, low rejection, and moderate harsh discipline (mod lo mod). Class 2, consisting of 20% (n = 36) of families, shows high acceptance, high

rejection, and high harsh discipline relative to the other profiles (hi hi hi). Class 3, consisting of 63% (n = 113) of families, shows relative high acceptance, low rejection, and low harsh discipline (hi lo lo). Class 4, consisting of 7% (n = 12) of families, shows low acceptance, high rejection, and high harsh discipline relative to the other profiles (lo hi hi).

In the MA families, 51% were classified in Class 3 (hi lo lo), 23% were classified in Class 2 (hi hi hi), 14% were classified in Class 1 (mod lo mod), and 10% were classified in Class 4 (lo hi hi). In EA families, 76% were classified in Class 3 (hi lo lo), 13% were classified in Class 2 (hi hi hi), 8% were classified in Class 1 (mod lo mod), and 3% were classified in Class 4 (lo hi hi). A series of paired chi-square cross-tab tests were conducted to compare proportions of the ethnic makeup of the four profiles. Results shows that Class 2 (hi hi hi) and Class 4 (lo hi hi) had a significantly greater proportion of MA families compared to Class 3 (hi lo lo; $\chi^2(1)= 5.53$, $p < .05$; $\chi^2(1) = 7.07$, $p < .05$). In Class 3 (hi lo lo), there was a greater percentage of EA families compared to MA families (76% vs. 51%). In Class 2 (hi hi hi), there was a greater percentage of MA families compared to EA families (23% vs. 13%). Similarly in Class 4 (lo hi hi), there was a greater percentage of MA families compared to EA families (10% vs. 3%). No other profile comparisons were significantly different.

Aim 2

Power analyses using MPLUS showed that with the current sample size of 179, the power to detect a medium sized effect of .39 was high (β's >.80). Correlations among child, mother, and father-report of parenting variables of acceptance, rejection, and harsh-

discipline showed that parent and child reports were significantly related in EA families, but not consistently in MA families (see Table 6). Specifically, in EA families, child-reports of mother or father acceptance, rejection, and harsh-discipline were significantly related to corresponding mother and father reports (all p's < 04). However, in the MA sample, only child-report of mother's acceptance and father-report of mother's acceptance were significantly correlated ($r = .28$, $p < .05$). All other variables were not significantly related (p's range .09 - .53). A Fisher's r-z-transformation test comparing the magnitude of the EA versus MA child-parent correlations showed significant differences between agreement on father acceptance ($z = 2.43$, $p < .05$), mother rejection ($z = 3.76$, $p < .001$), and mother harsh discipline ($z = 2.32$, $p < .05$). These results caution against combining mother, father, and child-reports of parenting behavior for subsequent analyses. The focus of the current study on the effect of parenting on child outcomes across development suggests that child perception of parenting would likely be more meaningful than parent-perspective. How a child interprets their parent's behavior will likely have more of an effect on their physiological and mental health outcomes than parent-reports that might differ from the child's interpretation. Additionally, for acceptance and rejection, parents reported on their spouse rather than on themselves, suggesting some unclear reporter-bias. Therefore, only child-report of acceptance, rejection, and harsh discipline were used for analyses of Aim 2 and 3. Child-report of aspects of mother and father parenting were highly correlated (all r's > .59, $p < .001$), supporting the creation of composite variables. The average of child-report of mother and father variables was used to create acceptance, rejection, and harsh discipline composites.

Table 7 shows the zero-order correlations between study variables, separated by ethnicity. Correlations with AUCg controlled for YA age, gender, and time of day. In the EA subsample, child-report of rejection and harsh discipline significantly correlated with YA externalizing problems ($r = .36$, $p < .01$ and $r = .27$, $p < .01$ respectively). In the MA subsample, parent acceptance, rejection, and harsh discipline were not significantly related to YA externalizing problems. In both groups, no relations with cortisol reached significance. In both groups, all parenting variables were significantly related to each other in the expected directions (e.g., parent acceptance significantly negatively correlated with parent rejection). In the MA sample, child traditional values were significantly positively correlated with child-report of parent acceptance ($r = .46$, $p < .01$) and marginally negatively correlated with child-report of parent harsh discipline ($r = -.25$, $p = .07$). Additionally, child traditional values were marginally positively correlated with AUCg ($r = .23$, $p = .09$).

Acceptance X Rejection

Path analyses examined a stacked model of the effect of the interaction between rejection and acceptance on adolescent stress response (AUCg) and subsequent externalizing problems in young adulthood. The chi-square test comparing the fully constrained and freely estimated model showed that the EA and MA models were not significantly different ($\chi^2_{constrained}$ (19) = 23.51, p =.22; χ^2_{free} (8) = 9.62, p = .29; $\chi^2_{difference}$ (11) = 13.89, p =.24). Therefore, the groups were combined and the model was re-run with the full sample. Figure 4 shows the full model. Parent rejection was marginally related to lower AUCg ($b = -.06$, $p = .07$). AUCg was not significantly related to YA

externalizing problems. The interaction between parent acceptance and rejection significantly predicted YA externalizing problems at Wave 5. This significant interaction was probed at one standard deviation above and below the mean of acceptance (Figure 6). When acceptance was high, rejection significantly related to more externalizing problems (b = .64, p = .02). However, when acceptance was low, rejection did not significantly predict externalizing problems (b = -.20, p = .41). Because AUCg was not found to significantly relate to externalizing, mediation analyses were not conducted.

Acceptance X Harsh Discipline

Due to the fact that measurement invariance criteria were not met for the child-report of harsh discipline measures, the EA and MA models were run separately (not stacked). Therefore, the models could not be compared statistically, but comparisons are instead exploratory (Figure 5).

In EA families, higher acceptance significantly predicted lower AUCg (b = -.11, p = .03). In addition, harsh discipline marginally predicted higher externalizing problems (b = .52, p < = .08). The interaction between parent acceptance and harsh discipline did not significantly predict AUCg in EA families. In MA families, the interaction between acceptance and harsh discipline significantly predicted AUCg (b = .03, p = .04). This significant interaction was probed at one standard deviation above and below the mean of acceptance (Figure 7). When acceptance was high, harsh discipline marginally related to higher AUCg (b = .17, p = .07). However, when acceptance was low, harsh discipline was not significantly to AUCg (b = -.02, p = .69). Mediation analyses were not indicated as AUCg was not significantly related to YA externalizing.

Aim 3

Bivariate correlations were used to examine the relations between child traditional values (i.e, 3 subscales of *familismo*) and child-report of parenting variables at Wave 1. All subscales, obligation to family, family as referent, and family as a source of support, were significantly positively related to parent acceptance (r's range .45 to .52, p's < .01). In addition, obligation and referent subscales were significantly negatively correlated with harsh discipline ($r = -.23$, $p < .01$ and $r = -.24$, $p < .05$). Obligation to family was marginally negatively related to parent rejection ($r = -.18$, $p = .09$).

DISCUSSION

The current study sought to better understand the effect of non-responsive parenting on physiological stress response and externalizing behavior problems in young adult (YA) offspring from both European-American (EA) and Mexican-American (MA) families. This study provides a more comprehensive understanding of non-responsive parenting behavior by assessing levels of acceptance, rejection, and harsh discipline in both mothers and fathers. It was hypothesized that patterns of parenting would differ in EA and MA families. In addition, it was expected that in EA families, non-responsive parenting (i.e., rejection and harsh discipline) would predict higher externalizing problems in YA offspring, and that this relation would be significantly mediated by blunted stress response. In MA families, it was hypothesized that non-responsive parenting would predict blunted stress response and subsequent externalizing problems in youth only when parent acceptance was low. In other words, it was expected that acceptance would be protective against the negative effects of non-responsive parenting

for MA youth. Finally, it was expected that in MA families, children's traditional *familismo* values would be correlated with more positive perceptions of parenting behavior (i.e., higher acceptance, lower rejection, and lower harsh discipline).

Consistent with hypotheses, four patterns of parenting profiles emerged. Families demonstrated one of four parenting patterns: high acceptance/low rejection/low harsh discipline, moderate acceptance/low rejection/moderate harsh discipline, low acceptance/high rejection/high harsh discipline, or high acceptance/high rejection/high harsh discipline. As hypothesized, patterns of non-responsive parenting behavior differed between EA and MA families in that significantly more EA families demonstrated the high acceptance/low rejection/low harsh discipline profile and significantly more MA families demonstrated the latter two profiles (low acceptance/high rejection/high harsh discipline and high acceptance/high rejection/high harsh discipline). The model that hypothesized that the effects of non-responsive parenting on offspring externalizing problems in young adulthood would be mediated by dysregulated stress response was not supported. In both EA and MA families, there was a significant interaction between rejection and acceptance predicting YA externalizing problems. Specifically, rejection only predicted higher externalizing problems in YAs when acceptance was high. When acceptance was low, rejection did not significantly relate to later externalizing problems in youth. The hypothesis that the effect of non-responsive parenting on offspring stress response would differ by ethnicity was supported. In MA families, there was a significant interaction between harsh discipline and acceptance predicting offspring stress response. Harsh discipline significantly related to elevated stress response when acceptance was

high, but was not related to stress response when acceptance was low. In EA families, harsh discipline was not significantly related to offspring stress response, but acceptance predicted blunted stress response. Finally, consistent with hypotheses, in MA families, YA *familismo* significantly correlated with more favorable perceptions of parenting behavior (i.e., higher acceptance, lower rejection, and lower harsh discipline). These findings are discussed in greater detail below.

Aim 1

The first aim sought to better understand and compare the patterns of parenting behavior in EA versus MA families. The resulting patterns were compared with the four traditionally accepted parenting styles (i.e., authoritative, permissive, authoritarian, neglectful; Baumrind, 1967) that have been consistently identified in previous research. EA and MA families fell into one of four patterns: high acceptance/low rejection/low harsh discipline, moderate acceptance/low rejection/moderate harsh discipline, low acceptance/high rejection/high harsh discipline, and high acceptance/high rejection/high harsh discipline. Of the four parenting profiles, one profile matched with an Authoritative parenting style (high acceptance, low rejection, low harsh discipline) and one matched with an Authoritarian parenting style (low acceptance, high rejection, high harsh discipline) (Baumrind, 1967; Maccoby & Martin, 1983). A greater proportion of MA families fell into the "Authoritarian" (low acceptance, high rejection, high harsh discipline) profile compared to EA families. This is consistent with the previous literature that has found that MA parents tend to use more rejecting and harsh discipline parenting strategies compared to EA families (Cardona et al., 2000; Varela et al., 2004).

Researchers have suggested that the use of these parenting behaviors previously understood to be "non-responsive" may be used by these families to instill more traditional cultural values in MA youth (e.g., *respeto;* Calzada et al., 2010).

However, one profile emerged that was not consistent with these commonly accepted parenting styles (high acceptance, high rejection, high harsh discipline). There was a greater proportion of MA families compared to EA families with this new profile. This finding is consistent with previous studies that have suggested that MA families tend to exhibit higher levels of "non-responsive" parenting behaviors such as harsh discipline *in addition* to high levels of accepting and warm behaviors (Hill et al., 2003; Knight et al., 1994). These studies have shown higher rates of parent non-responsiveness in MA families compared to EA families and that, in MA families, non-responsive parenting correlates with higher rates of acceptance. The person-centered analytic approach used in the current study extends beyond these previous findings by considering the different aspects of parenting behaviors together, rather than inferring ethnic differences in parent style based on descriptive differences or correlations. The new parenting profile found in the current study corresponds with the *no nonsense* profile found for MA fathers by White and her colleagues (2013). In the current study this parenting profile was demonstrated by a greater percentage of MA families compared to EA families and by both mothers and fathers, suggesting that this combination of parenting behavior may be more prevalent than previously thought. Taken together, these findings suggest that the higher rates of "non-responsive" behaviors often seen in MA families are also likely to be coupled with warm/accepting parenting. Replication of the current findings of this new

style of parenting in MA families will be important for future investigations. Parenting is typically assessed in the context of Baumrind's (1967) four parenting styles, not allowing for a more culturally informed measure and understanding of parenting. Analyses using this person-centered approach with larger samples in different geographical areas are needed to determine whether parenting styles used by mothers and fathers in MA families are commonly characterized by both warm and harsher strategies.

It is interesting that in MA families, children's perceptions of parenting were less strongly related to parents' perceptions of their own or their spouse's parenting compared to children in EA families. Parent-reported measures of mother and father acceptance and rejection were gathered based on spouse rather than self-report, an approach that has not been typically used in the literature. However, mothers and fathers reported on their own use of harsh discipline. There was significantly lower agreement between MA children and their parents on reports of father acceptance and mother rejection and harsh discipline compared to EA children and parents. It appears that MA children and parents had more disagreement on parenting constructs that were less consistent with the traditional parenting behaviors expected by mothers versus fathers. Research shows that in MA families, consistent with traditional gender roles, mothers tend to be more supportive and responsive to children's emotions compared to fathers (Gamble, Ramakumar, & Diaz, 2007; Varela et al., 2004). Therefore, the cultural expectations regarding accepting behaviors in fathers and non-responsive behaviors in mothers may differ between MA youth and their parents and affect reports on these parenting variables.

Previous studies that have examined ethnic differences in inter-reporter agreement between parents and children have tended to focus on the reporting of child mental health symptoms (Carlston & Ogles, 2009; Fung & Lau, 2010). One study found greater parent-child agreement in reporting of child behavior problems in Hispanic compared to Caucasian dyads (Carlston & Ogles 2009). This study included a wider age range of youth (11-18 years) and did not differentiate between mother and father-report. Another study demonstrated that acculturative differences between parents and children (in Chinese American families) contributed to greater discrepancies in mother versus youth-report of child internalizing problems (Fun & Lau, 2010). Though not compared statistically, Parke and colleagues (2004) reported similar parent-child agreement in report of mother and father hostile parenting in EA and MA families. Many researchers use composite variables of parenting (e.g., Simons, Johnson, & Conger, 1994; Parke et al., 2004), combining several reporters to get a more accurate picture of the particular variable. Given the current findings, future studies should be careful to examine inter-reporter agreement before combining reports of parenting (Tein, Roosa, & Michaels 1994), particularly when including an ethnically and/or culturally diverse sample.

Aim 2

The second aim examined the comprehensive prospective model testing the effects of non-responsive parenting on stress response and externalizing problems in YA offspring in EA and MA families (Figure 2). The findings did not support the theorized model that the effect of non-responsive parenting behavior on YA externalizing problems would be mediated by dysregulated stress response. Specifically, YA stress response was

not related to subsequent externalizing problems. Previous studies supporting the theorized model have examined the process in much younger children (i.e., preschool and kindergarten; Davies et al., 2007; Koss et al., 2012; O'Neal et al., 2010) over a shorter time span of approximately two years. It is possible that the process from non-responsive parenting to externalizing problems in young adult offspring is not as easily explained by dysregulated stress response across this longer period of time. The current study spanned a total of 10 years as youth transitioned from late childhood to late adolescence to young adulthood. In these later developmental stages, there are other factors that may more proximally mediate the effect of non-responsive parenting on more serious externalizing problems in young adulthood (e.g., social competence, risky behavior; Repetti et al., 2002).

Parenting and Externalizing

Although the full theoretical model was not supported, there were interesting findings that may increase the understanding of how different aspects of non-responsive parenting predict externalizing problems as offspring enter young adulthood. First, in the full sample, which included both EA and MA families, acceptance in late childhood marginally predicted lower externalizing in YA offspring 10 years later. This is consistent with previous studies that have found warmth and acceptance to be strong predictors of positive adjustment in youth across development (Amato & Fowler, 2002; Rohner & Britner, 2002). Interestingly, the relation between rejection and externalizing problems depended upon the level of acceptance, such that rejection predicted greater externalizing problems when acceptance was higher. When acceptance was lower,

rejection did not significantly predict externalizing problems. The previous studies that have shown a main effect of rejection on child and adolescent offspring externalizing problems have examined non-responsive parenting behaviors independently from one another (Hoeve et al., 2009; Rothbaum & Weisz, 1994; Stormshak et al., 2000). Though studies have examined the effects of different aspects of parenting, they did not assess how the parenting behaviors interacted to predict subsequent child outcomes. Current findings suggest that considering patterns of parenting behavior may be more informative when seeking to understand predictors of subsequent externalizing problems in youth.

Although the finding that the effect of rejection on externalizing problems depended on level of acceptance was unexpected, there are several plausible explanations for this pattern. First, it may be that rejection most strongly predicts externalizing behavior problems in YA offspring in the context of a "confusing" parenting environment. Caregiver behaviors that alternate between accepting and rejecting may contribute to a disorganized attachment pattern in youth (Bowlby, 1982), where they are not sure what to expect from parents nor do they know how to interact with them. This pattern of disorganized attachment has been linked with increased aggressive behaviors in younger offspring (Lyons-Ruth, 1996; Madigan, Moran, Schuengel, Pederson, & Otten, 2007), and it is possible that a similar mechanism may explain the impact of inconsistent exposure to both accepting and rejecting parenting in older offspring. When children are being exposed to both rejecting (e.g., neglectful, irritated) as well as accepting (e.g., positive attention, warmth) parenting, this intermittent reinforcement may by confusing. Children then may develop more behavior problems in an attempt to elicit

attention (any kind of attention) from their parents because they know receiving attention is possible. Operant conditioning theories support that intermittent/variable reinforcement more greatly perpetuates a specific behavioral response (Lerman, Iwata, Shore, & Kahng 1996; Murphy, McSweeney, Smith, & McComas, 2003), and this process may be particularly salient in youth (e.g., related to the development and maintenance of behavior problems). As this theory suggests, parents may not realize that they are inadvertently motivating and reinforcing their child's behavior problems. Children's attention-seeking behaviors may begin as less serious in childhood, but if variably reinforced by parents, develop into more serious externalizing problems over the course of development (Arnett & Tanner, 2006; Loeber & Farrington, 1998).

Alternatively, children who have parents who do not show high levels of acceptance, particularly as they enter adolescence and are seeking more support in developing their individual sense of selves, may instead seek out support and attention from other sources (e.g., peers; Fuligni & Eccles, 1993). If the peer relationships are positive, this support may protect them against the development of subsequent externalizing behavior problems (Sentse, Lindenberg, Omylee, Ormel, & Veenstra, 2010). However, this alternate pattern of overall parent rejection, coupled with low levels of acceptance, may lead to the development of internalizing rather than externalizing problems in young adulthood. Studies have found significant relations between exposure to parent rejection/neglect and internalizing problems in both children and adolescents (e.g., Muris, Meesters, & van den Berg, 2003; Bolger & Patterson, 2001). Parent rejection has been shown to contribute to a lower internal sense of self-efficacy, which

subsequently predicts increased symptoms of anxiety and depression in youth (Bolger & Patterson, 2002). These studies have not considered the potential effect of parent acceptance on this relation, but it is likely that children exposed to neglectful parenting and exhibiting internalizing problems such as depression and anxiety experienced this type of non-responsive environment. Future studies trying to better understand the interactive effects between various parenting strategies should include both externalizing and internalizing mental health outcomes to better inform the development of parenting-focused preventive interventions.

Parenting and Stress Response

In addition to the effect of non-responsive parenting on YA externalizing problems, patterns of parenting behavior also predicted offspring stress response. Specifically, the effect of exposure to harsh discipline on stress response in offspring in late adolescence differed by ethnicity. Consistent with study hypotheses, in MA families, harsh discipline marginally related to elevated stress response when acceptance was high, but did not predict stress response when acceptance was low. In other words, in MA families, exposure to high parent acceptance was protective against the effect of harsh discipline on blunted stress response. Unexpectedly, in EA families, parent acceptance predicted lower total cortisol in offspring and harsh discipline did not relate to cortisol activity. Given the opposing findings in types of stress response related to parenting, it is important to consider whether elevated or blunted stress response is adaptive in these YA offspring. Previous studies have increasingly found evidence of blunted cortisol in youth exposed to negative family environments such as abuse or harsh discipline (e.g., Debellis,

2001) and that blunted stress response is a long-term effect of exposure to earlier environmental stress (e.g., Heim, et al., 2000; Lovallo et al., 2012). Stress response systems in MA youth exposed to the repeated use of harsh discipline, without concurrent exposure to acceptance, may have down regulated in attempts to protect the body from the harm caused by continuous HPA axis activation (Fries et al., 2005), thus resulting in more attenuated cortisol levels in response to the stress task. . However, in the current study, it appears that in MA youth, simultaneous exposure to parent acceptance was protective against this negative effect (Figure 7).

Yet, in EA youth, parent acceptance predicted blunted stress response in offspring in late adolescence. This finding is consistent with previous studies that have found elements of parent non-responsiveness to instead be linked with elevated basal cortisol levels when measured concurrently (Byrd-Crae et al., 2012; Marsman et al., 2012). According to these studies, more responsive parenting would therefore be related to lower cortisol levels. Given that in EA parenting profiles, high acceptance was generally paired with low levels of rejection and harsh discipline, it is likely that EA youth exposed to warm parenting in late childhood were not also exposed to frequent environmental stressors associated with non-responsive parenting. Therefore, lower reactivity in response to the stress task may be more suggestive of having been raised in a secure environment where down-regulation of the stress response system did not happen. EA youth who received less parental acceptance may feel less secure in their environment, resulting in an overly sensitive HPA axis (Cummings & Davies, 1996; Waters & Cummings, 2000) and greater reactivity to the social stress task. Both elevated as well as

blunted stress response have been linked with negative physical and mental health outcomes, (Heim et al. 2000).

Findings supported the hypothesis that the effect of exposure to harsh discipline on offspring stress response differs by ethnicity. Previous reviews and studies that have shown negative physiological effects of exposure to this type of environmental stress have not specifically examined ethnic differences (e.g., Debellis, 2001; Goldman-Mellor et al., 2012). Though studies examining ethnic differences in the effects of harsh discipline on youth behavioral outcomes have found that harsh discipline is less predictive of child behavior problems in groups where harsh parenting is more normative (Lansford et al. 2005). In the current study, however, it appears that the effect of harsh discipline on dysregulated stress response in MA youth is attenuated when there is simultaneous exposure to parent acceptance. This finding that in MA families, acceptance may be protective against the detrimental effects of harsh discipline is consistent with previous studies that have shown that harsher parenting strategies may not be as harmful in MA youth in the context of simultaneous exposure to warm parenting (Hill et al., 2003). It appears that one reason for the unique interaction between parent harsh discipline and acceptance may be that warm parenting strategies are more commonly coupled with the harsher discipline in MA families. EA parents on the other hand, more typically exhibited the more well-studied patterns of parenting (e.g., authoritative) and did not use high levels of acceptance in conjunction with harsh strategies as commonly as did MA parents. Although the patterns of the parenting used in MA families may help explain the finding, it is also likely that culture may affect children's interpretation of

their parent's harsher behaviors which has implications for the subsequent effect these behaviors have on their physiological health. Potential effects of culture on youth interpretation of parenting behaviors are discussed in greater detail below.

While the effect of exposure to harsh discipline on youth cortisol output differed by ethnicity, the effect of parent rejection on YA externalizing problems was found in both EA and MA families. Further, given that the effect of rejection on externalizing depended upon levels of acceptance, it can be assumed that the mechanism of the effect cannot understood in the same way as the effect of harsh discipline on similar outcomes (i.e., social learning theory; Conger et al., 2003; Kleisner et al., 2001). These findings suggest that parent rejection and parent harsh discipline; though both conceptualized as aspects of non-responsive parenting may not affect youth physiological and mental health outcomes in the same way. Harsh discipline (e.g., yelling, hitting) likely occurs in response to a specific child misbehavior. Therefore, in MA families, when positive child behaviors are also met with parent acceptance, this may negate the negative effects of the parent harsh discipline on dysregulated stress response. Parent rejection (e.g., neglecting child, finding the child to be irritating), however, may instead be more pervasive and may not always occur in response to identifiable child misbehaviors. In fact, rejecting parents may exhibit signs of irritation in response to children seeking help or guidance. Therefore, similar behaviors that are met with both accepting and rejecting responses may be confusing for both EA and MA children and result in externalizing problems as described above. Future studies examining the effects of "non-responsive" parenting may

benefit from measuring aspects of parenting separately in order to better understand differential and interactive effects.

Aim 3

The third aim of the study sought to examine how MA youths' adherence to traditional cultural family values affected how they perceived their parent's parenting behaviors. Understanding the influence of culture may elucidate plausible reasons for the ethnic differences found in the effect of non-responsive parenting on offspring stress response. Consistent with hypotheses, all components of *familismo* (i.e., having an obligation to family, viewing family as a source of support, and viewing family as referent) were positively related to higher perceptions of parent acceptance. These findings are consistent with previous descriptive studies that have theorized that adherence to traditional cultural values may explain more favorable perceptions of parents in MA youth (e.g., emotional support, open communication; Crockett et al., 2007) and other studies that have found significant associations between *familismo* and positive parenting/involvement in MA families according to parent-report (Santisteban, Coatsworth, Brinoes, Kurtines, & Szapocznic, 2012).

In addition, findings showed that being referent to family and feeling obligated to family significantly related to lower child perceptions of parent harsh discipline. Obligation to family was marginally related to lower child perception of rejection. Valuing the importance of family, seeing oneself as part of the family unit, and feeling obligated to one's family may help children see their parents in a more favorable light (e.g., Crockett et al., 2007; Luis et al., 2008). For example, children with more collective,

family-centered values may not perceive non-responsive parenting behaviors like harsh discipline as negatively as children who have more individualistic values. In fact, they may instead perceive these parenting strategies as a sign of quality parenting (Grusec, Rudy, & Martini, 1997) as they are more consistent with traditional cultural values. They may understand that although their parents are using these harsher strategies, they continue to be part of the family unit and feel valued and secure in their environment (Chandler, Tsai, & Wharton, 1999; Luis et al., 2008) and therefore report lower levels of non-responsive parenting behaviors. Alternatively, it is possible that children with more traditional *familismo* values have better relationships with their parents who may share similar family-centered values (Coohey, 2001; Smokowski & Bacallao, 2006). Differences in parent-child relationships based on levels of *familismo* may explain the discrepancy between the higher rates of non-responsive parenting behaviors in MA families and the relation between *familismo* and more positive child-perceptions of parenting. Although not examined in the current study, findings suggest that adherence to more traditional cultural values such as *familismo* may be protective against negative outcomes for MA youth. Future studies examining ethnic differences in the effect of non-responsive parenting on child physiological and mental health should explore whether youth traditional cultural values may help explain significant differences.

Limitations and Future Directions

The current study findings must be interpreted in light of several limitations. First, the small sample size prevented the use of the parenting profile groups in subsequent analyses because the groups produced were too small. While the current approach of

examining the interaction between various types of parenting behaviors allowed for the consideration of simultaneous exposure to multiple parenting strategies, the use of the latent profile results would have provided a richer understanding of the complete environment that these children were exposed to in late childhood. Second, the lack of multiple measurements of cortisol over time precluded the ability to better understand the causal pathways between dysregulated stress response and mental health problems (e.g., from cortisol to externalizing or externalizing to cortisol). Previous concurrent studies have linked blunted stress response to higher externalizing problems (e.g, Luecken et al., 2010; VanGoozen et al., 2007), without being able to speak to the direction of effect. The current study, while controlling for previous levels of externalizing problems, could not confidently test the direction of the causal process. Measurement of baseline levels of cortisol, in addition to the baseline levels of externalizing problems, would be necessary to compare the bidirectional possibilities of the effect from stress response to externalizing problems or vice versa. Relatedly, it is possible that the non-significant relation between stress response and YA externalizing problems is due to the fact that the AUCg measure did not sufficiently capture cortisol dysregulation. It is possible that the adapted Trier Social Stress Task did not produce an adequate stress response in participants or that the calculation of AUCg did not adequately capture reactivity. Further, while the current study used multiple reporters of parenting behaviors (mother, father and child), some measures may have been affected by reporter bias (e.g., parent report on spouse or parent self-report). The non-traditional approach of parent reporting on spouse rather than on themselves is not typically used and the bias is therefore unclear.

Additionally, analyses of the proposed model used youth-report of both parenting and externalizing behavior problems. Observation of family interactions may have yielded different findings. Finally, the current study included only intact families. Findings may differ greatly for youth from divorced families as exposure to inter-parental conflict and varying types of parenting strategies depending on custody arrangements/parenting time may impact how exposure to non-responsive parenting affects subsequent physiological and mental health outcomes in youth later in development (e.g., Davies et al., 2007; Martinez & Forgatch, 2002).

Beyond the study design limitations, there are also caveats that need to be considered when interpreting the current findings. First, it is difficult to interpret the adaptive meaning of cortisol values (either high or low). Although it is well understood that both blunted and elevated levels put individuals at risk for physical and mental health problems, there is not a clear range of what is considered to be "healthy" cortisol levels and levels often vary in response to a specific task or context (Miller et al., 2007). In addition, because child-report of harsh discipline was not found to be invariant across ethnicity, a different analytic approach was used when examining parent rejection versus harsh discipline. This has implications for how the ethnic groups could be statistically compared. Although the results suggest ethnic differences in the effect of harsh discipline on offspring stress response, these models were not compared statistically due to the lack of measurement invariance for the harsh discipline measure. Therefore, while the effect of parent rejection on YA externalizing problems was determined to function similarly

between EA and MA groups, the same more sophisticated analyses could not be run for the harsh discipline model.

Future studies can begin to address these limitation and caveats by improving upon study design and including additional predictor and outcome variables. Studies with larger samples and longitudinal designs with multiple assessments of parenting, stress response, and youth externalizing problems would allow the examination of how the parenting profiles resulting from the LPA analyses predict subsequent physiological and mental health functioning in offspring over time. Such studies would also provide for a better understanding of the causal pathways between cortisol and externalizing problems than was possible in the current study. These studies with larger sample sizes should be able to measure cortisol reactivity more explicitly (e.g., using longitudinal growth modeling) in order to better capture stress response dysregulation. It is also important to consider additional biomarkers such as alpha amylase that, in conjunction with cortisol, have been found to relate to externalizing problems in adolescents and young adults (Bauer, Quas, & Boyce, 2002; Gordis, Granger, Susman, & Trickett, 2006). Cortisol is a byproduct of the HPA axis and alpha-amylase is a byproduct of the sympathetic nervous system which are both involved in the body's physiological response to environmental stress (Chrousos & Gold, 1992). Blunted cortisol reactivity has been found to predict higher externalizing problems when alpha amylase reactivity is also low, but not when alpha amylase reactivity is high. It is possible, in addition to the reasons described above, that the non-significant pathway from total cortisol to externalizing problems in YAs is due to the fact that this other important biomarker was not simultaneously examined

which would have strengthened cortisol as a predictor. Further, future studies could examine factors other than stress response to explain the effect of non-responsive parenting on YA externalizing problems. For example, the Oregon Delinquency Model posits that involvement with delinquent peers mediates the relation between non-responsive parenting and offspring externalizing problems (Dishion, Spracklen, Andrews, & Patterson, 1996) and previous studies have supported this theory (e.g., Forgatch, Patterson, DeGarmo, & Beldavs, 2009; Scarmella, Conger, Spoth, & Simons, 2002. It will be important for future studies to examine ethnic and cultural differences when testing this model. Additional possible alternate mediators that have been found to relate to externalizing problems include youth attention and effortful control (Eisenberg et al., 2005). Finally, it will be important for future studies to explore additional negative outcomes predicted by dysregulated stress response. While cortisol was not found to predict externalizing problems in the current study, previous studies have linked dysreglulated stress response to a multitude of adverse mental and physical health consequences including depression, hypertension, heart disease, and chronic pain (Heim et al., 2000; McEwen, 2002). It will be important to incorporate these outcomes into the theoretical model and to consider how the effect of non-responsive parenting on these physical and mental health outcomes might differ by ethnicity and/or culture. Because these physical and mental health outcomes tend to have different relations with the type of cortisol dysregulation (e.g., depression is typically related to elevated stress response whereas pain disorders have been linked with a hypocortisol response; Heim et al., 2000;

Nemeroff, 1996), it will be important for studies to include analytic designs that would allow for discrepant directions of effect.

Implications

The results of the current study have important implications for the development and implementation of preventive interventions that target non-responsive parenting behaviors in ethnically diverse families. Current empirically-supported and evidenced-based prevention-focused parenting programs (e.g., The Incredible Years, New Beginnings Program, Parenting through Change) tend to focus on multiple aspects of parenting behavior that can promote positive adjustment in youth (Forgatch, 1994; Webster-Stratton, 2003; Wolchik et al., 2000). While teaching these effective parenting strategies the program curricula tend to focus first on aspects of parental warmth followed by sessions focused on limit setting and discipline. These approaches are typically based on the theories of adaptive parenting styles described above (i.e., Baumrind's theory of authoritative parenting as the most adaptive). However, the current findings may inform how such interventions could be uniquely developed or tailored for families from diverse ethnic and cultural backgrounds. First, it is important for intervention developers as well as group leaders to understand the unique patterns of parenting among families from various cultural backgrounds, particularly which parenting styles have been found to be normative and healthy for youth. For example, the current study suggests that in MA families, parenting profiles of higher acceptance in addition to higher use of harsh discipline strategies are common and do not necessarily predict negative outcomes as would be expected when considering harsh discipline

independently. It may be more beneficial for preventive interventions to focus more on the fostering positive relationships between parents and children, rather than focusing on eliminating all use of harsh discipline strategies. Culturally competent leaders may understand that these seemingly harsher strategies (e.g., yelling) may be used in these families to instill traditional cultural values (Calzada et al., 2010) and may therefore not be perceived to be as negative in the context of the collective family unit.

Acceptance/warm parenting was shown to be important across ethnic groups. However, parent acceptance in the absence of rejecting strategies was shown to be much more protective against the development of externalizing problems than the use of both accepting and rejecting parenting behaviors. Exposure to intermittent use of warm and neglectful parenting was detrimental to youth. Therefore, in addition to focusing on the development of warm and accepting parenting skills, it would be equally important to support parents in findings ways to reduce rejection (e.g., parents being overly irritated with their children or acting as if they do not matter). For example, interventions could incorporate an additional focus on coping strategies (e.g., relaxation, anger management) for parents to use in order not to inadvertently employ a mixture of parenting strategies that may be confusing and potentially harmful for children. Based on the current findings, this approach appears to be important across cultures.

Conclusion

The current study is one of the first to examine a longitudinal prospective model that may better explain the effect of patterns of non-responsive parenting behavior on offspring stress response and externalizing problems later in development in an ethnically

diverse sample. Study findings point to the importance of considering ethnic and cultural differences when seeking to understand the effects of particular parenting strategies as they may not be consistent across groups. In addition, the current study shows the long-term effects that exposure to non-responsive parenting behaviors may have on youth as they become young adults. It is important to continue with this line of study in order to better inform the development of culturally competent interventions that can better prevent both dysregulated stress response and serious behavior problems in youth from a variety of ethnic and cultural backgrounds.

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Table 1

Descriptive Statistics of Study Variables in Full Sample

	N	*Range*	*Mean(SD)*	*Skewness*	*Kurtosis*
W1 Father Acceptance - mother report	179	10 - 30	26.15 (4.00)	-1.55	2.73
W1 Father Rejection - mother report	179	10 - 30	13.81 (3.73)	1.86	4.21
W1 Mother Acceptance - father report	179	17 - 30	27.88 (5.92)	1.25	1.53
W1 Mother Rejection - father report	179	9 - 21	12.09 (2.73)	1.14	.95
W1 Father Acceptance - child report	179	11 - 30	25.85 (3.90)	-1.15	1.44
W1 Father Rejection - child report	179	10 - 28	14.43 (3.61)	1.01	1.00
W1 Mother Acceptance - child report	179	12 - 30	27.62 (3.58)	-2.22	5.44
W1 Mother Rejection - child report	179	10 - 28	13.73 (3.56)	1.34	1.85
W1 Father Harsh Discipline - self	179	- 2.42 - 12.38	.00 (2.81)	2.01	4.70
W1 Mother Harsh Discipline - self	179	-2.86 -12.93	.01 (2.89)	1.64	3.27
W1 Father Harsh Discipline - child	179	-2.16 - 13.96	.00 (2.94)	2.36	6.61
W1 Mother Harsh Discipline - child	179	-2.27 – 13.10	.00 (2.88)	1.70	3.17
W1 Traditional Values - child-report	84	3.21 - 5.00	4.41 (.45)	1.13	.79
W1 *Familismo* - Support	84	3.00 – 5.00	4.51 (.42)	-.91	.80
W1 *Familismo* – Referent	84	2.60 – 5.00	4.25 (.62)	-.80	-.07
W1 *Familismo* - Obligation	84	3.50 – 5.00	4.49 (.47)	-.54	-.88
W1 Externalizing Problems	179	20.50 – 44.50	29.83 (4.65)	.49	.33
W4 Cortisol P1	130	.61 - 23.01	5.57 (3.43)	1.79	5.50
W4 Cortisol P2	117	.75 - 15.48	5.57 (3.44)	1.08	1.10
W4 Cortisol P3	117	.56 - 14.65	5.02 (3.01)	.94	.60
W4 Cortisol P4	116	.49 - 12.21	4.82 (2.92)	1.04	1.33
W4 AUCg	118	43.15 - 804.30	301.16 (169.71)	.83	.25
W5 Externalizing Problems - YA	164	35-70	43.71 (7.23)	1.70	.92

Table 2

Bivariate correlations of potential covariates with cortisol variables

	P1 Cortisol	P2 Cortisol	P3 Cortisol	P4 Cortisol	AUCg
Age	-.11	-.19*	-.18ǂ	-.12	-.18ǂ
Gender	-.19*	-.14	-.16ǂ	-.09	-.15ǂ
Medication	.09	.09	.11	.17ǂ	.11
Birth control	.01	.03	.01	.07	.03
Ethnicity	-.01	-.06	-.11	-.09	-.08
Exercise	.00	.03	.01	.05	.01
Caffeine	-.02	.00	-.01	-.05	-.02
Tobacco use	-.13	-.11	-.10	-.15	-.12
Time	-.28**	-.32**	-.30**	-.29**	-.33**

Note. ǂp < .10; *p < 05; **p < .01

Table 3

Measurement Invariance of Non-Responsive Parenting across EA and MA Groups

Scale	Model	$\chi 2$(df)	CFI	RMSEA	SRMR
Father Acceptance/Rejection – Mother Report	1. Config	532 (338)	.883	.073	.069
	2. Weak	556 (356)	.880	.072	.084
Mother Acceptance/Rejection – Father Report	1. Config	402 (266)	.850	.069	.077
	2. Weak	468.8 (316)	.837	.067	.096
Father Acceptance/Rejection – Child Report	1. Config	504 (297)	.825	.080	.077
	2. Weak	590(374)	.805	.080	.093
Mother Acceptance/Rejection – Child Report	1. Config	528 (338)	.883	.072	.069
	2. Weak	548 (356)	.882	.071	.085
Mother/Father Harsh Discipline – Self Report	1. Config	66.32 (36)	.92	.09	.068
	2. Weak	74.84 (44)	.91	.083	.087
Mother/Father Harsh Discipline – Child Report	1. Config	49.69 (24)	.97	.10	.05
	2. Weak	100.55 (34)	.91	.13	.09

Table 4

Descriptive Statistics of Study Variables by Ethnicity

Variable	EA Sample *M (SD)*	MA Sample *M (SD)*	T-Test
ΔW1 Father Acceptance - mother report	25.89 (3.55)	26.10 (4.44)	-.34
ΔW1 Father Rejection - mother report	13.37 (3.07)	14.07 (4.06)	-1.31
W1 Mother Acceptance - father report	27.94 (2.56)	27.83 (2.73)	.25
ΔW1 Mother Rejection - father report	11.73 (2.56)	12.48 (2.88)	**-1.81** ǂ
ΔW1 Father Acceptance - child report	26.45 (3.22)	25.40 (4.23)	**1.87** ǂ
ΔW1 Father Rejection - child report	13.51 (2.85)	15.15 (3.49)	**-2.60 ****
ΔW1 Mother Acceptance - child report	27.97 (3.30)	27.04 (4.00)	**1.71** ǂ
ΔW1 Mother Rejection - child report	13.08 (4.00)	14.46 (3.98)	**-2.60 ****
ΔW1 Father Harsh Discipline - self	.18 (2.86)	-.20 (2.78)	-.03
ΔW1 Mother Harsh Discipline - self	.00 (2.52)	.01 (3.27)	.90
W1 Father Harsh Discipline - child	-.34 (2.68)	.38 (3.20)	**-1.63** ǂ
W1 Mother Harsh Discipline - child	-.34 (2.69)	.39 (3.06)	**-1.71** ǂ
W1 Traditional Values - child-report	N/A	4.41 (.45)	N/A
W1 Externalizing Problems	30.20 (4.57)	29.41 (4.74)	1.14
W4 Cortisol P1	5.74 (3.19)	5.37 (3.72)	.64
W4 Cortisol P2	5.28 (2.95)	4.74 (3.07)	.96
W4 Cortisol P3	5.08 (3.02)	4.52 (2.81)	1.03
W4 Cortisol P4	4.00 (2.28)	3.44 (1.92)	1.43
W4 AUCg	316.10 (174.04)	284.61 (164.75)	1.01
W5 Externalizing Problems - YA	43.83 (6.88)	43.58 (7.64)	.21

Note. Δ Variables included in the latent profile analyses (LPA) following test for measurement invariance. ǂp < .10; *p < .05; **p < .01

Table 5

Results of Latent Profile Analyses of Non-responsive Parenting in Full Sample

# Classes	# Parameters	Log Likelihood	AIC	BIC	SABIC	LMR Adjusted LRT test	Proportion in each class
2	35	-4099.47	8268.93	8387.07	8276.16	299.42 (p=.29)	.77/.23
3	48	-4020.66	8137.32	8299.34	8147.23	155.39 (p=.86)	.81/.10/.09
4	61	-3923.14	7968.27	8174.16	7980.86	152.13 (p=.46)	.63/.20/.10/.07
5	74	-3922.52	7993.04	8242.81	8008.31	58.55 (p=.42)	.70/.16/.10/.03 /.01

Table 6

Correlations between Child-report and Mother/Father-report of Parenting Behaviors by Ethnicity.

Acceptance				
	Mother		Father	
	Father-report EA	Father-report MA	Mother-report EA	Mother-report MA
Child-report	.32**	.28*	.43**	.09
Rejection				
	Mother		Father	
	Father-report EA	Father-report MA	Mother-report EA	Mother-report MA
Child-report	.39**	-.16	.21*	.18
Harsh Discipline				
	Mother		Father	
	Mother-report EA	Mother-report MA	Father-report EA	Father-report MA
Child-report	.40**	.07	.28**	.16

Note. *p < 05; **p < .01

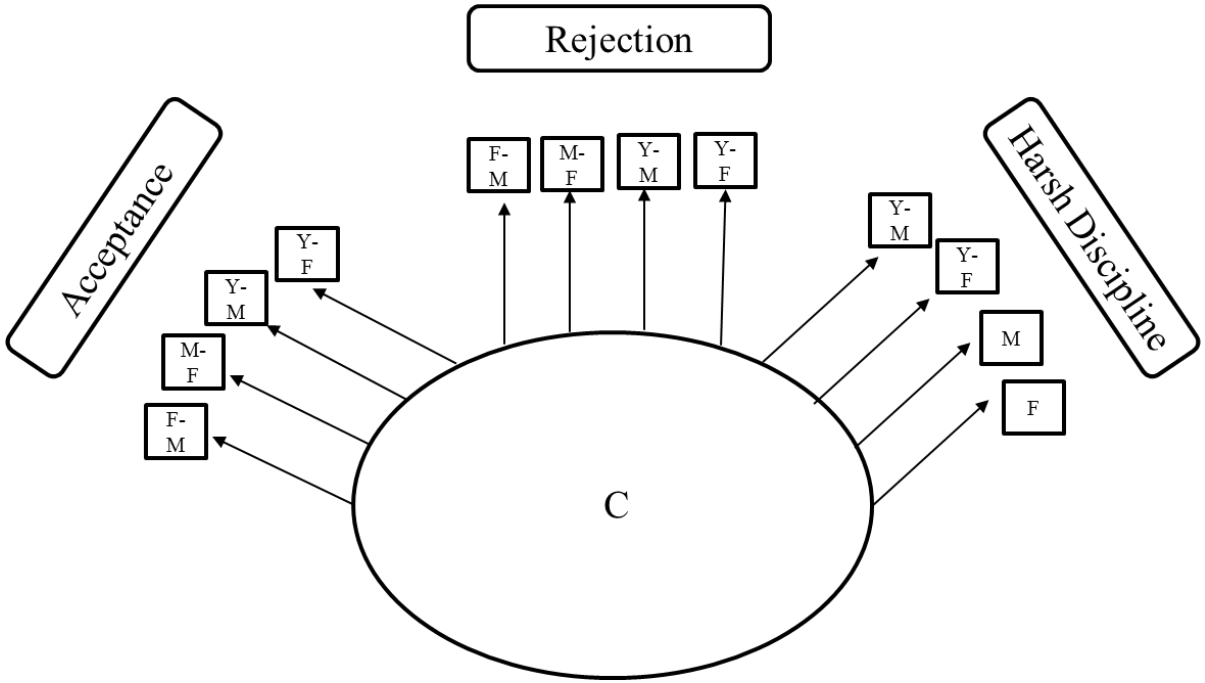
Table 7

Zero-order Correlations of Study Variables by Ethnicity.

	W1 Parent Acceptance	W1 Parent Rejection	W1 Parent Harsh Discipline	W4 AUCg	W5 Externalizing Problems
W1 Parent Acceptance – child-report	1	-.49**	-.48**	-.17	-.20
W1 Parent Rejection – child-report	-.40**	1	.53**	-.14	.36**
W1 Parent Harsh Discipline – child-report	-.41**	.34*	1	-.14	.27**
W4 AUCg	.10	-.08	-.07	1	-.06
W5 Externalizing Problems	-.15	.10	-.10	-.01	1
W1 Traditional Values	.46**	-.01	-.25ǂ	.23 ǂ	-.17

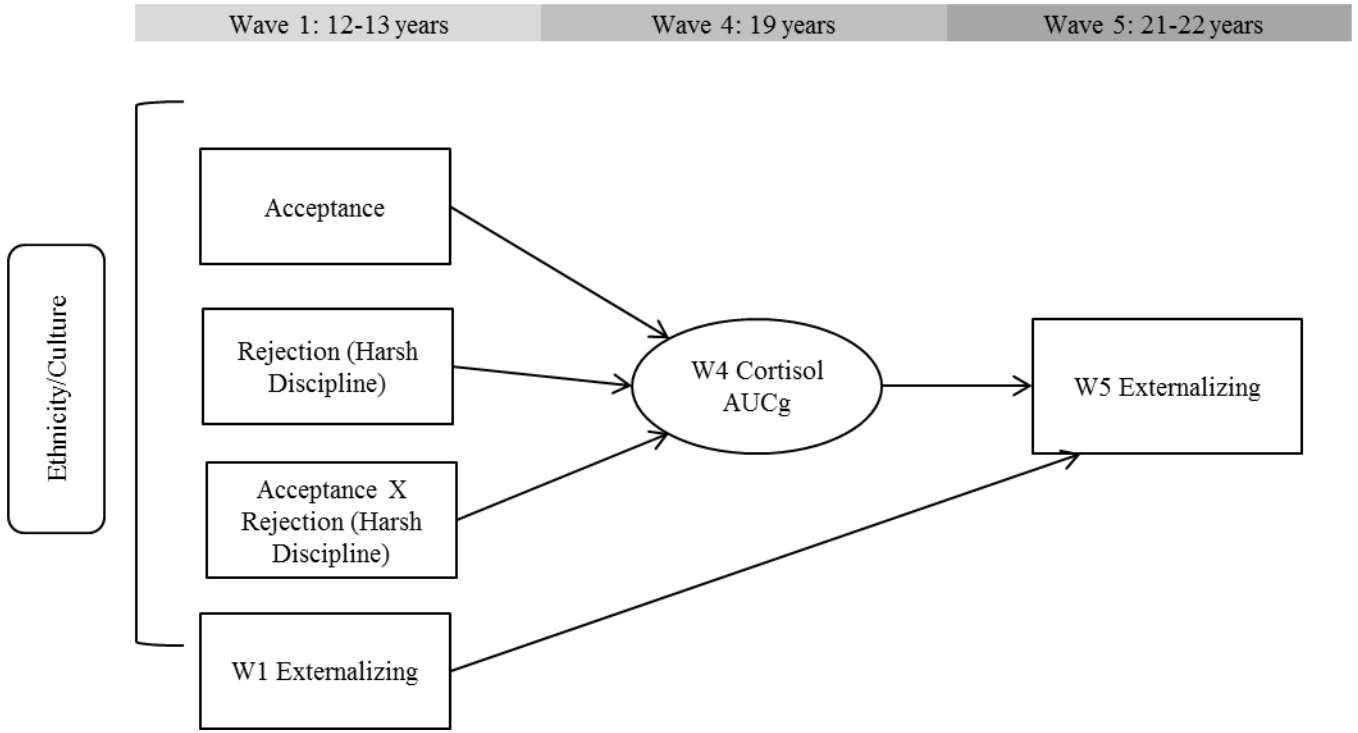
Note. Partial Correlations with Cortisol Control for YA Age, Gender, and Time. Top half of table represents EA families and bottom half represents MA families. ǂp < .10; *p < 05, *p < .01

Figure 1: Representation of the latent profile analysis



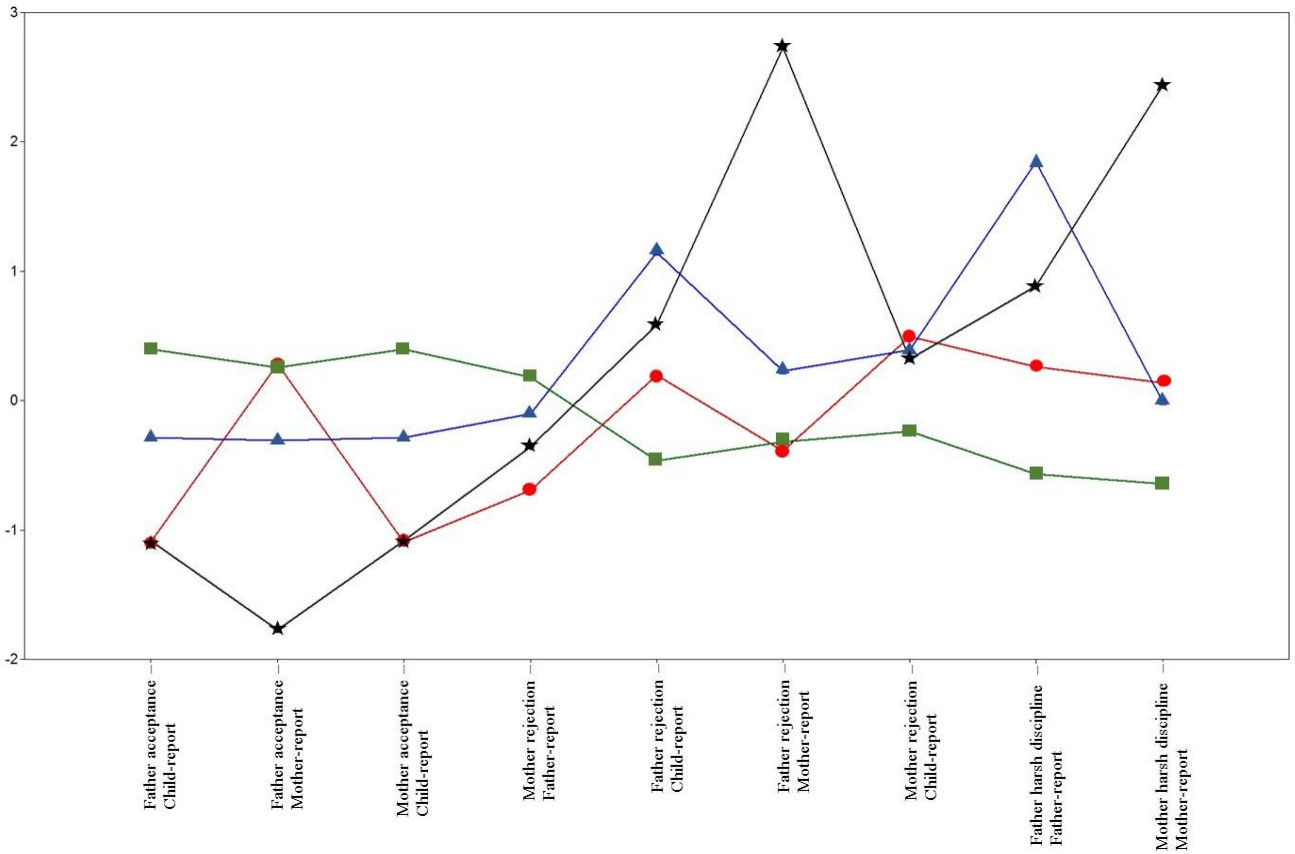
Note. Y, M, and F denote the 9 indicators according to youth, mother, and father-report respectively. Acceptance, Rejection, and Harsh Parenting are the three parenting behaviors considered when forming the parenting profiles. The latent categorical variable c classifies families according to their parenting profile based on the 9 indicators. Residual errors and parameter disturbances are not depicted.

Figure 2: Proposed path model of the effect of non-responsive parenting (i.e., rejection or harsh discipline) moderated by acceptance in late childhood on offspring externalizing in young adulthood, mediated by stress response in late adolescence.



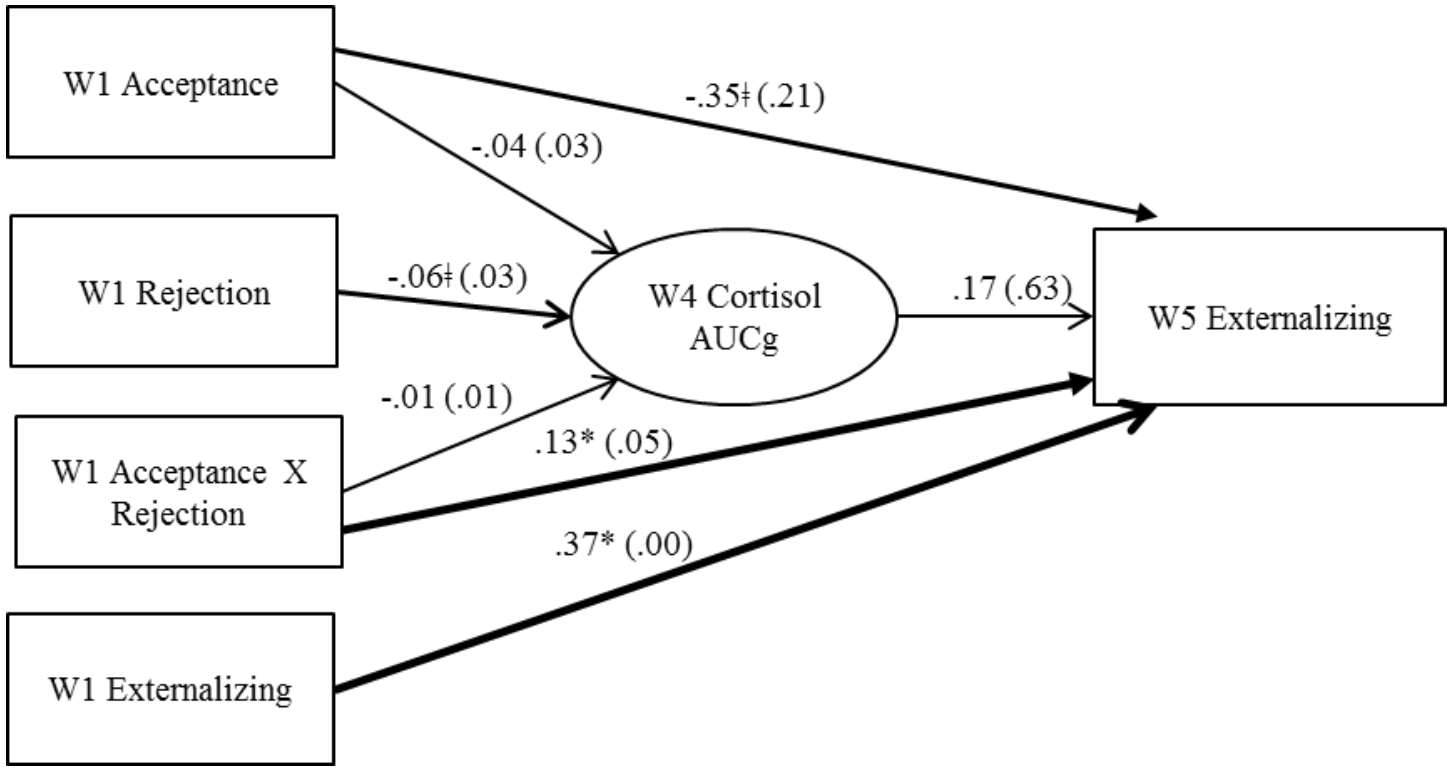
Note. Covariates and exogenous variable disturbances are not depicted.

Figure 3: Four profile LPA solution



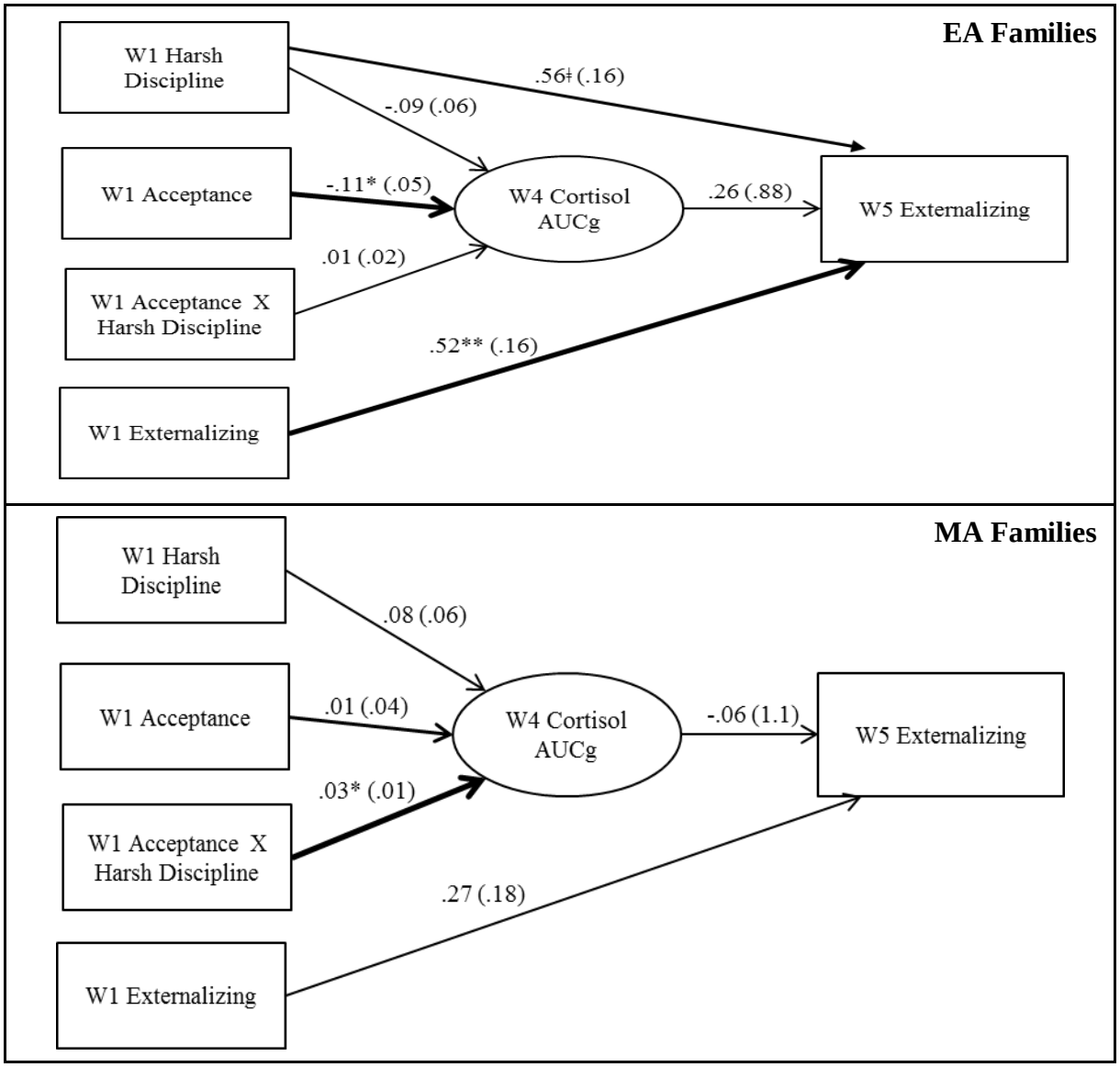
● – 10% - moderate acceptance, low rejection, moderate harsh (mod lo mod)
▲ – 20% - high acceptance, high rejection, high harsh (hi hi hi)
■ – 63% - high acceptance, low rejection, low harsh discipline (hi lo lo)
★ – 7% - low acceptance, high rejection, high harsh (lo hi hi)

Figure 4: AUCg Acceptance X Rejection model in full sample.



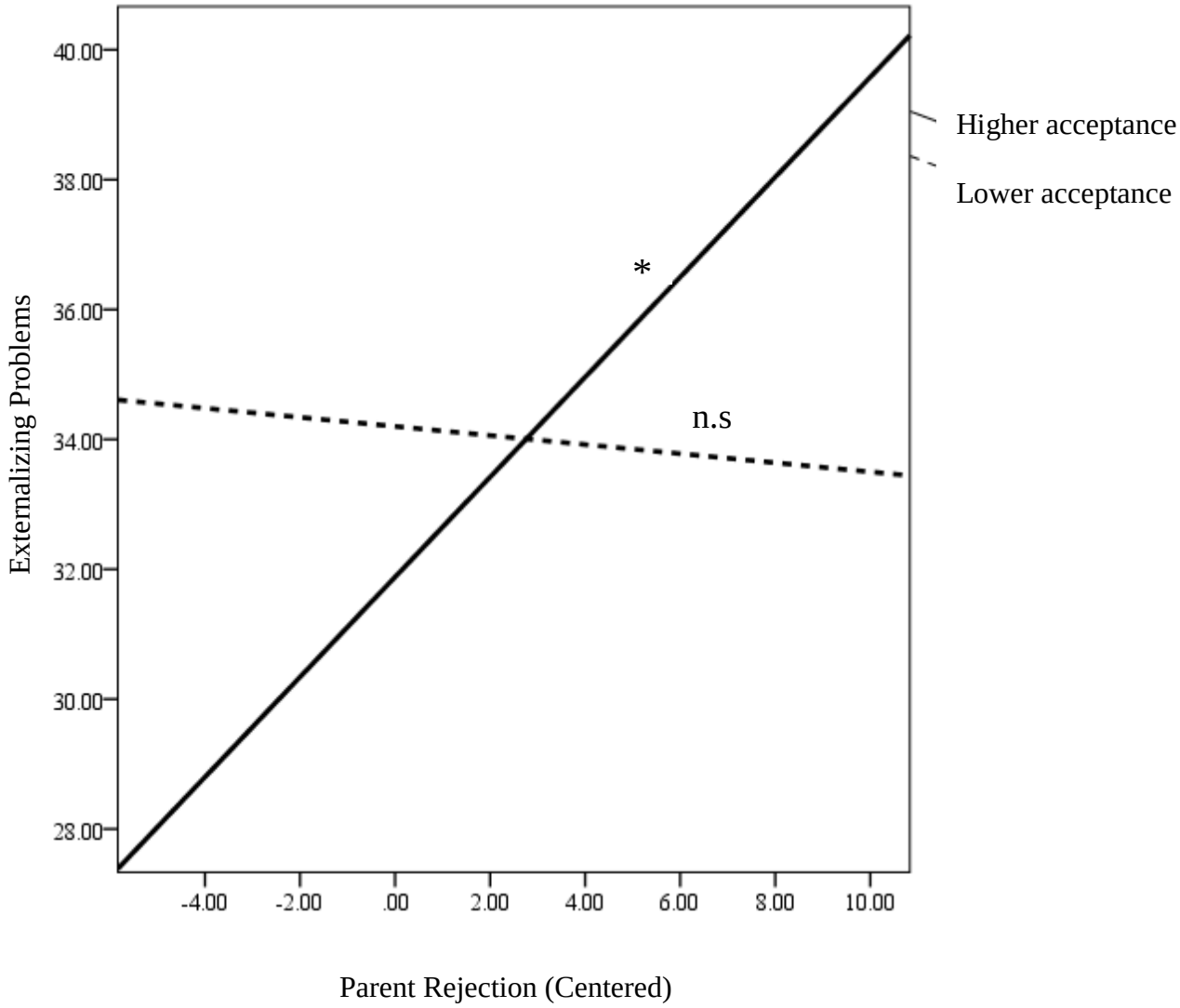
Note: Unstandardized regression co-efficients and standard errors presented. Non-significant paths from previous time-point variables are not shown. Time, age, and gender covariates not-shown. ǂp < .10; * p < .05.

Figure 5: AUCg Acceptance X Harsh Discipline in EA and MA families.



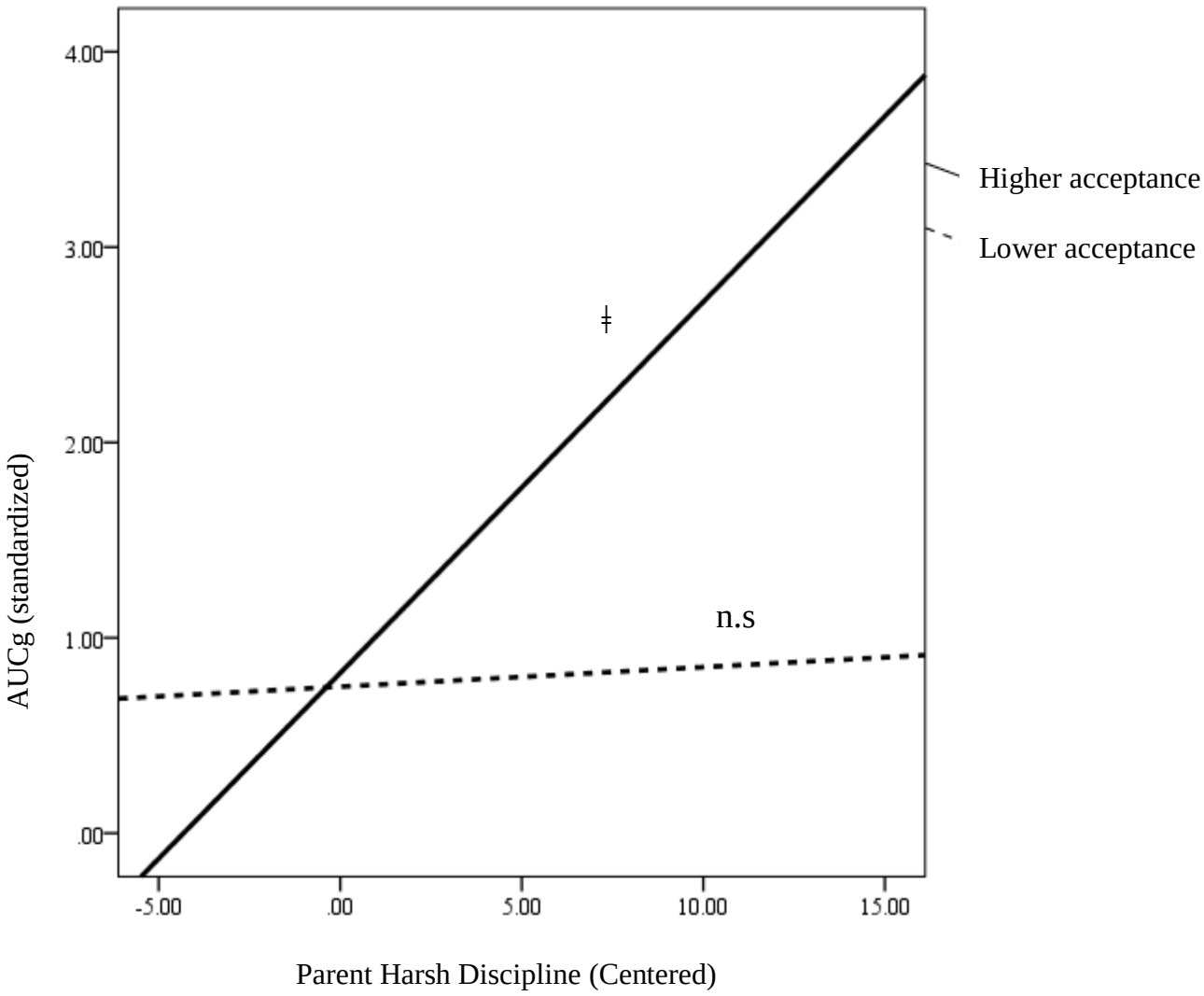
Note: Unstandardized regression co-efficients and standard errors presented. Non-significant paths from previous time-point variables are not shown. Time, gender, and age covariates not shown. .ǂp < .10; * p < .05.

Figure 6: Acceptance X Rejection interaction effect on Externalizing Problems in Full Sample.



*Note. * p < .05; n.s. non-significant*

Figure 7*:* Acceptance X Harsh Discipline interaction effect on AUCg in MA families.



Note. ǂ $p < .10$; n.s. non-significant.

A CHILD REPORT OF PARENTING BEHAVIOR (CRPBI)

CRPBI - PAYS	**SCALE NAME:** Father report about mother: dcrpbiam, dcrpbirm, dcrpbidm Mother report about father: mcrpbiad, mcrpbird, mcrpbidd Child report about father/stepfather: acrpbiad, acrpbird, acrpbidd Child report about non-resident father: acrpbian, acrpbirn, acrpbidn Child report about mother: acrpbiam, acrpbirm, acrpbidm
This scale measures parenting, particularly acceptance, rejection, and consistent discipline. Child reports on Mother, Father/Stepfather, and Biological Father. Mother reports on Father/Stepfather, and Father/Stepfather reports on Mother.	**Page last updated: 11/07/05**

CRPBI – DESCRIPTION & SYNTAX

The original CRPBI was developed by Schaefer (1965a) as a means of assessing children's perceptions of their parents' behavior, which he thought might be more related to their adjustment than their parents' actual behaviors. Three subscales of a revised version of the CRPBI are used in PAYS: Acceptance, Rejection and Consistency of Discipline (Teleki et al., 1982).

Another PRC study, the New Beginnings Follow-Up, shortened the CRPBI for their study to 28 items. With a combination of the results of the descriptive statistics of the items, internal consistency (alpha) and the confirmative factor analysis from NBF, they were able to shorten the scales for both Acceptance and Rejection. For further information regarding item elimination, see NBF documentation Appendix I. Ten items were used for acceptance, ten items for rejection, and eight items tapped consistent discipline. Thus, the acceptance and rejection subscales were each shorten by six items and the consistent discipline subscale was left intact. The three subscales were not combined to form one composite as the internal consistency for the total scale was not acceptable. Each subscale should be analyzed separately.

We chose to have child report on all adults (mom, father/stepfather, and non-resident dad) and also to have mom report on father/stepfather and father/stepfather report on mom. Using cross reporters was intended to decrease response bias as the reporter is not the target. **Alpha for each subscale are the following: Father report of mother: .81 for acceptance, .74 for rejection, and .82 for consistent discipline; Mother report of father: .89 for acceptance, .81 for rejection, and .84 for consistent discipline; Child report of father/stepfather: .88 for acceptance, .77 for rejection, and .71 for consistent discipline; Child report of non-resident father: .91 for acceptance, .82 for rejection, and .67 for consistent discipline; Child report of mother: .87 for acceptance, .81 for rejection, and .71 for consistent discipline.**

CRPBI - SCALE SUBJECT INSTRUCTIONS & ITEM LIST

Father/Stepfather Report

Subject Instructions:

*Think of the past 3 months since **[DATE 3 MONTHS AGO]** and tell us more about (wife/partner name)'s relationship with (child). Use list 27 and tell me how true each statement is for her during the past 3 months.*

Variable Name	Subscale	Item No.	Reverse Coded	Item Text
dpcim3	acceptance	190	R	During the past 3 months, (wife/partner) made (child) feel better after talking over (his/her) worries with (him/her).
dpcim4	rejection	191	R	During the past 3 months, (wife/partner) was not very patient with (child).
dpcim5	consistent discipline	192		During the past 3 months, (wife/partner) soon forgot a rule she had made.
dpcim6	rejection	193	R	During the past 3 months, (wife/partner) thought (child's) ideas were silly.
dpcim7	consistent discipline	194		During the past 3 months, (wife/partner) punished (child) for doing something one day, but ignored it the next.
dpcim8	acceptance	195	R	During the past 3 months, (wife/partner) understood (child's) problems and worries.
dpcim9	rejection	196	R	During the past 3 months, (wife/partner) forgot to help (child) when (he/she) needed help.
dpcim10	consistent discipline	197		During the past 3 months, (wife/partner) sometimes allowed (child) to do things that (wife/partner) said were wrong.
dpcim11	acceptance	198	R	During the past 3 months, (wife/partner) smiled at (child) very often.
dpcim12	rejection	199	R	During the past 3 months, (wife/partner) was always getting after (child), or nagging (him/her) about something.
dpcim13	consistent discipline	200		During the past 3 months, it depended on (husband/partner's) mood whether a rule was enforced or not.
dpcim14	acceptance	201	R	During the past 3 months, (wife/partner) was able to make (child) feel better when (he/she) was upset.

dpcim15	rejection	202	R	During the past 3 months, (wife/partner) almost always complained about what (child) did.
dpcim16	acceptance	203	R	During the past 3 months, (wife/partner) enjoyed doing things with (child).
dpcim17	consistent discipline	204		During the past 3 months, (wife/partner) only kept rules when it suited her.
dpcim18	acceptance	205	R	During the past 3 months, (wife/partner) enjoyed working with (child) in the house or yard.
dpcim19	rejection	206	R	During the past 3 months, (wife/partner) often blew her top when (child) bothered her.
dpcim20	acceptance	207	R	During the past 3 months, (wife/partner) comforted (child) when (he/she) was afraid.
dpcim21	acceptance	208	R	During the past 3 months, (wife/partner) cheered (child) up when (he/she) was sad.
dpcim22	rejection	209	R	During the past 3 months, (wife/partner) didn't get (child) things unless (he/she) asked for them over and over again.
dpcim23	rejection	210	R	During the past 3 months, (wife/partner) didn't seem to know what (child) needed or wanted.
dpcim24	consistent discipline	211		During the past 3 months, (wife/partner) insisted that (child) follow a rule one day and then (wife/partner) forgot about it the next.
dpcim25	acceptance	212	R	During the past 3 months, (wife/partner) had a good time at home with (child).
dpcim26	acceptance	213	R	During the past 3 months, (wife/partner) seemed proud of the things (child) did.
dpcim27	consistent discipline	214		During the past 3 months, (wife/partner) changed her mind to make things easier for herself.
dpcim28	rejection	215	R	During the past 3 months, (wife/partner) didn't work with (child).
dpcim29	consistent discipline	216		During the past 3 months, (wife/partner) frequently changed the rules (child) was supposed to follow.
dpcim30	rejection	217	R	During the past 3 months, (wife/partner) acted as though (child) was in the way.

Parent-Child Conflict Tactics - PAYS	**SCALE NAME:** Father report on self: dctsa Father report on mother: dctsma Mother report on self: mctsa Mother report on father/stepfather: mctsda Child report on father/stepfather: actsd Child report on non-resident father: actn Child report on mother: actsm
This scale measures psychological and physical maltreatment of children by parents. Mother reports on her and husband/partner's behavior. Father/Stepfather reports on his and wife/partner's behavior. Child reports on Mother, Father/Stepfather, and Biological Father behavior.	**Page last updated: 11/11/05**

Parent-Child Conflict Tactics – DESCRIPTION & SYNTAX

These items came from Straus et al. (1998) and were adapted by PAYS for this project. The original scale was cut drastically, as the normal discipline items (such as "explained") are covered in other measures used in this project like the CRPBI. Our measure was shortened to 4 items, based on categorizing the types of conflict tactics for psychological and physical maltreatment and one item for spanking. Therefore, the first two items focus on emotional and psychological maltreatment, the next item focuses on spanking, and the final item focuses on physical maltreatment. We also edit the answer choices to reflect only maltreatment and spanking that occurred in the past year although Straus et al. give an answer option that reflects previous maltreatment and spanking not occurring in the past year. This scale is an example of an effects model; thus, although the items do not correlate very highly and the alphas are sometimes lower than would be acceptable for a causal indicator model, we nevertheless regard them as forming one scale. **Alphas are .62 (father report on self), .68 (father report on mother), .70 (mother report on self), .64 (mother report on father), .66 (child report on father/stepfather), .54 (child report on nonresident father), and .69 (child report on mother).**

Father Report:

```
COMPUTE
dctsa= MEAN.3(zdctsa1, zdctsa2, zdctsa3, zdctsa4) * 4.
EXECUTE.

COMPUTE
dctsma= MEAN.3(zdctsoa1, zdctsoa2, zdctsoa3, zdctsoa4) * 4.
EXECUTE.
```

Mother Report:

```
COMPUTE
mctsa= MEAN.3(zmctsa1, zmctsa2, zmctsa3, zmctsa4) * 4.
EXECUTE.

COMPUTE
mctsda= MEAN.3(zmctsoa1, zmctsoa2, zmctsoa3, zmctsoa4) * 4.
```

```
EXECUTE.
```

Child report:

```
COMPUTE
actsd= MEAN.3(zactsd1, zactsd2, zactsd3, zactsd4) * 4.
EXECUTE.

COMPUTE
actsn= MEAN.3(zactsbd1, zactsbd2, zactsbd3, zactsbd4) * 4.
EXECUTE.
COMPUTE
actsm= MEAN.3(zactsm1, zactsm2, zactsm3, zactsm4) * 4.
EXECUTE.
```

Higher scores on this scale reflect higher maltreatment

Parent-Child Conflict Tactics - ASSOCIATED PAPERS

Straus, M.A., Hamby, S.L., Finkelhor, D., Moore, D.W., & Runyan, D. (1998). Identification of child maltreatment with the parent-child conflict tactics scales: Development and psychometric data for a national sample of American parents. *Child Abuse & Neglect, 22(4),* 249-270. [PDF]

Parent-Child Conflict Tactics - SCALE SUBJECT INSTRUCTIONS & ITEM LIST

Father/Stepfather Self-report:

Subject Instructions:

Children often do things that are wrong, disobey or make their parents angry. We would like to know what you have done when (child) did something wrong or made you upset or angry. Below is a list of things you might have done in the PAST YEAR, when you and (child) had difficulties. Fill in the bubble that shows how many times each happened IN THE PAST YEAR.

Variable Name	Subscale	Item Number	Reverse Coded	Item Text
dctsa1		S44		In the past year, how often did you shout at, yell at, scream at, swear at or curse at (child).
dctsa2		S45		In the past year, how often did you call (child) dumb or lazy or some other name like that, or say you would send him/her away or kick him/her out of the house?
dctsa3		S46		In the past year, how often did you spank (child) on the bottom with your bare hand?
dctsa4		S47		In the past year, how often did you hit, slap or strike (child) in any way OTHER THAN spanking him/her on the bottom with your bare hand?

C YOUNG-ADULT SELF-REPORT (YASR)

ACHENBACH YOUTH SELF REPORT/ ADULT SELF REPORT-- DESCRIPTION

W4 – Adult Self Report (ASR)

For wave 4 the scale was taken from another PRC project, (insert here). The ASR incorporates many items of the 1997 editions of the Young Adult Self-Report (YASR), plus new items and national norms that span ages 18-59. Like the YASR, the ASR includes normed scales for adaptive functioning, empirically based syndromes, substance use, Internalizing, Externalizing, and Total Problems. In addition, the ASR includes new DSM-oriented scales consisting of items identified as being very consistent with DSM-IV categories. A Critical Items scale, consisting of items particularly relevant to clinicians, is also included. The profiles represent scale scores in relation to norms for each gender at ages 18-35 and 36-59, based on national probability samples.

The following cross-informant syndromes were derived: Anxious/Depressed, Withdrawn, Somatic Complaints, Thought Problems, Attention Problems, Aggressive Behavior, Rule-Breaking Behavior, and Intrusive. The DSM-oriented scales are Depressive Problems, Anxiety Problems, Somatic Problems, Avoidant Personality Problems, Attention Deficit/Hyperactivity Problems, and Antisocial Personality Problems. The scales shared by the ABCL and ASR (Adult Self-Report) are Substance Use, Critical Items, Internalizing, Externalizing, and Total Problems.

ACHENBACH YOUTH SELF REPORT/ ADULT SELF REPORT - ASSOCIATED PAPERS

Achenbach, T.M. (1991). *Manual for the Youth Self-Report and 1991 Profile.* Burlington, VT: University of Vermont, Department of Psychology.
W5 – Adult Self Report (ASR)

Achenbach, T. M., & Rescorla, L. A. (2003). *Manual for ASEBA Adult Forms & Profiles*. Burlington, VT: University of Vermont, Research Center for Children, Youth, & Families.

ACHENBACH ADULT SELF REPORT - SCALE SUBJECT INSTRUCTIONS & ITEM LIST

Variable Name		**Item No.**		**Item**
Q5ABC003				Argues a lot.
Q5ABC005				Blames others for own problems.
Q5ABC006				Keep thinking about the past 3 months. Uses drugs (other than alcohol or nicotine) for nonmedical purposes.
Q5ABC007				Bragging, boasting.
Q5ABC012				Complains of loneliness.
Q5ABC014				Cries a lot.
Q5ABC016				Cruelty, bullying, or meanness to others.
Q5ABC019				Demands a lot of attention.
Q5ABC023				Breaks rules at work or elsewhere.
Q5ABC025				Doesn't get along with other people.

Q5ABC026				Doesn't seem to feel guilty after misbehaving.
Q5ABC028				Gets along badly with family.
Q5ABC030				Poor relations with opposite sex.
Q5ABC031				^namya fears (he/she) might think or do something bad.
Q5ABC033				Remember, the following items refer to ^namya in the past 3 months.
Q5ABC034				Feels others are out to get (him/her).
Q5ABC035				Feels worthless or inferior.
Q5ABC037				^namya gets in many fights.
Q5ABC039				Hangs around people who get in trouble.
Q5ABC041				Impulsive or acts without thinking.
Q5ABC042				Would rather be alone than with others.
Q5ABC043				Lying or cheating.
Q5ABC045				Nervous, high-strung, or tense.
Q5ABC047				Lacks self-confidence.
Q5ABC048				Not liked by others.
Q5ABC050				Too fearful or anxious.
Q5ABC051				Feels dizzy or lightheaded.
Q5ABC052				Feels too guilty.
Q5ABC054				Feels tired without good reason.
Q5ABC055				Moods swing between elation and depression. IF MOTHER DOES NOT UNDERSTAND ELATION, YOU CAN EXPLAIN BY SAYING, 'IT MEANS YOU ARE EXTREMELY HAPPY OR EXCITED.' IF MOTHER DOES NOT UNDERSTAND ELATION, YOU CAN EXPLAIN BY SAYING, 'IT MEANS YOU ARE EXTREMELY HAPPY OR EXCITED.'

Variable Name		**Item No.**		**Item**
Q5ABC56a				"^namya has aches or pains (not stomach or headaches).
Q5ABC56b				Headaches.
Q5ABC56c				Nausea, feels sick.
Q5ABC56d				Problems with eyes (not if corrected by glasses).
Q5ABC56e				Rashes or other skin problems.
Q5ABC56f				Stomach aches.
Q5ABC56g				**Vomiting, throwing up.**

D TRADITIONAL CULTURAL VALUES

MACVS-Values - COMMENTS

High scores on the Enculturation subscales reflect agreement with enculturation values. High scores on the Acculturation subscales reflect agreement with acculturation values.

COMPUTE caccult=MEAN.10(cmaas51, cmaas54, cmaas57, cmaas58, cmaas60, cmaas11, cmaas19, cmaas28, cmaas37, cmaas47, cmaas17, cmaas25, cmaas36, cmaas44).
Execute.

MACVS-Values - SCALE SUBJECT INSTRUCTIONS & ITEM LIST

Subject Instructions

The next statements are about what people may think or believe about how families should behave. Please tell me how much you agree or disagree with each statement at this time. There are no right or wrong answers. If you

aren't sure what a word or sentence means, please let me know. Please choose the number that shows how much you agree or disagree with the statement.

El siguiente grupo de oraciones son sobre lo que la gente puede pensar o creer. Por favor digame que tan de acuerdo o en desacuerdo está usted con las siguientes oraciones. No hay respuestas correctas o incorrectas. Si no está seguro/a de lo que significa una palabra o lo que quiere decir una oración, por favor pregúnteme. Por favor elija el numero que demuestra que tanto usted esta de acuerdo o en desacuerdo con la oración.

Father

Variable Name	Subscale	MACV #	Item No.	Item Text
fmaas1	ENRELN	8	237	How much do you agree that …God is first; family is second. Dios está primero, la familia está segundo.
fmaas4	ENFASE	2	240	Parents should teach their children that the family always comes first. Los padres deben enseñarle a sus hijos que la familia siempre viene primero.
fmaas5	ENFMOB	3	241	Children should be taught that it is their duty to care for their parents when their parents get old. Se les debería enseñar a los niños que es su obligación cuidar a sus padres cuando ellos envejezcan.
fmaas6	ENFARF	4	242	Children should always do things to make their parents happy. Los niños siempre deberían hacer las cosas que hagan a sus padres felices.
fmaas7	ENRESP	5	243	No matter what, children should always treat their parents with respect. Sea lo que sea, los niños siempre deben tratar a sus padres con respeto.
fmaas11	ACINSR	7	247	People should learn how to take care of themselves and not depend on others. La gente debe aprender como cuidarse sola y no depender de otros.
fmaas12	ENFASE	9	248	Family provides a sense of security because they will always be there for you. La familia da una sensación de confianza porque uno siempre puede contar con ellos.
fmaas13	ENFMOB	11	249	If a relative is having a hard time financially, you should help them out if you can. Si un pariente está teniendo dificultades económicas, uno debe ayudarle si puede.
fmaas14	ENFARF	12	250	When it comes to important decisions, the family should seek advice from close relatives. Cuando se trata de decisiones importantes la familia debería pedir consejos a sus parientes más cercanos.
fmaas15	ENGEND	13	251	Men should earn most of the money for the family so women can stay home and take care of the children and the home. Los hombres deberían ganar la mayoría del dinero para la familia para que las mujeres puedan quedarse en casa y cuidar a los hijos y el

				hogar.
fmaas17	ACCOMP	14	253	You must be ready to compete with others if you want to get ahead. Uno tiene que estar listo para competir con otros si uno quiere salir adelante.
fmaas18	ENRESP	15	254	Children should never question their parents' decisions. Los hijos nunca deberían cuestionar las decisiones de los padres.
fmaas19	ACINSR	17	255	The most important thing parents can teach their children is to be independent from others. Lo más importante que los padres pueden enseñar a sus hijos es que sean independientes de otros.
fmaas20	ENRELN	1	256	My belief in God gives me inner strength and gives meaning to life. Mi creencia en Dios me fortalece y le da significado a la vida.
fmaas21	ENGEND	19	257	Families need to watch over and protect teenage girls more than teenage boys. Las familias necesitan vigilar y proteger más a las niñas adolescentes que a los niños adolescentes.
fmaas22	ENFASE	20	258	It is always important to be united as a family. Siempre es importante estar unidos como familia.
fmaas25	ACCOMP	23	261	Parents should encourage children to do everything better than others. Los padres deberían animar a sus hijos para que hagan todo mejor que los demás.
fmaas26	ENRESP	25	262	Children should always honor their parents and never say bad things about them. Los niños siempre deberían honrar a sus padres y nunca decir cosas malas de ellos.
fmaas28	ACINSR	26	264	As children get older their parents should allow them to make their own decisions. Según como los niños van creciendo, los padres deben dejar que ellos tomen sus propias decisiones.
fmaas29	ENRELN	27	265	If everything is taken away, I still have my faith in God. Si me quitan todo, todavía me queda mi fé en Dios.
fmaas30	ENFASE	28	266	It is important to have close relationships with aunts/uncles, grandparents and cousins. Es importante mantener relaciones cercanas con tíos/tías, abuelos/as y primos/as.
fmaas31	ENFMOB	29	267	Older kids should take care of and be role models for their younger brothers and sisters. Los hermanos grandes deberían cuidar y darles el buen ejemplo a los hermanos y hermanas menores.
fmaas32	ENFARF	30	268	Children should be taught to always be good because they represent the family. Se les debe enseñar a los niños a que siempre sean buenos porque ellos

				representan a la familia.
fmaas33	ENRESP	31	269	Children should follow the rules of their parents, even if they think the rules are unfair. Los niños deben seguir las reglas de sus padres, aún cuando piensen que no son justas.
fmaas34	ENGEND	32	270	It is important for the man to have more power in the family than the woman. En la familia es importante que el hombre tenga más poder que la mujer.
fmaas36	ACCOMP	33	272	Personal achievements are the most important things in life. Los logros personales son las cosas más importantes en la vida.
fmaas37	ACINSR	35	273	When there are problems in life, a person can only count on (him/her)self. Cuando hay problemas en la vida, uno sólo puede contar con uno mismo.
fmaas38	ENRELN	36	274	It is important to thank God everyday for all we have. Es importante darle gracias a Dios todos los días por todo lo que tenemos.
fmaas40	ENFASE	37	276	Holidays and celebrations are important because the whole family comes together. Los días festivos y las celebraciones son importantes porque se reúne toda la familia.
fmaas41	ENFMOB	38	277	Parents should be willing to make great sacrifices to make sure their children have a better life. Los padres deberían estar dispuestos a hacer grandes sacrificios para asegurarse que sus hijos tengan una vida mejor.
fmaas42	ENFARF	39	278	A person should always think about their family when making important decisions. Uno siempre debe pensar en su familia cuando toma decisiones importantes.
fmaas44	ACCOMP	41	280	Parents should teach their children to compete to win. Los padres deberían enseñarle a sus hijos a competir para ganar.
fmaas45	ENGEND	42	281	The mother is the main person responsible for raising children. La madre es la persona principal responsable por la crianza de los hijos.
fmaas47	ACINSR	44	283	Parents should encourage children to solve their own problems. Los padres deberían animar a sus hijos a que resuelvan sus propios problemas.
fmaas48	ENFASE	46	284	It is important for family members to show their love and affection to one another. Es importante que los miembros de la familia muestren su amor y

				afecto unos a otros.
fmaas49	ENFARF	47	285	It is important to work hard and do your best because your work reflects on the family. Es importante trabajar duro y hacer lo mejor que uno pueda porque el trabajo de uno se refleja en la familia.
fmaas50	ENGEND	50	286	A wife should always support her husband's decisions, even if she doesn't agree with him. Una esposa debe siempre apoyar las decisiones de su esposo, aunque no esté de acuerdo con él.
fmaas51	ACMATR	6	287	Children should be taught that it is important to have a lot of money. Se les debe enseñar a los niños que es importante tener mucho dinero.
fmaas52	ENRELN	18	288	Parents should teach their children to pray. Los padres deberían enseñar a sus hijos a rezar.
fmaas53	ENRESP	10	289	Children should respect adult relatives as if they were parents. Los niños deberían respetar a familiares adultos como si fueran sus padres.
fmaas54	ACMATR	16	290	Money is the key to happiness. El dinero es la clave para la felicidad.
fmaas55	ENFMOB	21	291	A person should share (his/her) home with relatives if they need a place to stay. Uno debería compartir su casa con parientes si ellos necesitan donde quedarse.
fmaas56	ENRESP	22	292	Children should be on their best behavior when visiting the homes of friends or relatives. Los niños deberían portarse de la mejor manera cuando visitan las casas de amigos o familiares.
fmaas57	ACMATR	24	293	Owning a lot of nice things makes me very happy. Tener muchas cosas buenas me hace muy feliz.
fmaas58	ACMATR	34	294	The more money you have, the more respect you should get from others. Entre más dinero uno tenga, más el respeto que uno debería recibir de otros.
fmaas59	ENRESP	40	295	It is important for children to understand that their parents should have the final say when decisions are made in the family. Es importante que los niños entiendan que sus padres deberían tener la última palabra cuando se toman decisiones en la familia.
fmaas60	ACMATR	43	296	The best way for a person to feel good about themselves is to have a lot of money. La mejor manera de sentirse bien acerca de uno mismo es teniendo mucho dinero.

fmaas61	ENRELN	45	297	It is important to follow the Word of God. Es importante seguir la Palabra de Dios.
fmaas62	ENRELN	48	298	Religion should be an important part of your life. La religión debería ser una parte importante de la vida.
fmaas63	ENRESP	49	299	Children should always be polite when speaking to any adult. Los niños siempre deberían ser amables cuando hablan con cualquier adulto.