

POWER ASSERTIVE DISCIPLINE, ATTACHMENT, AND INTERNALIZING PROBLEMS

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Power Assertive Discipline and Internalizing Problems in Adolescents:

The Role of Attachment

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SYNOPSIS

Objective. To increase our understanding of the link between power assertive discipline and internalizing problems in adolescence, the present study investigated the role of attachment. **Design.** For this purpose, 514 families (mothers, fathers, and adolescents ranging in age from 10 to 18 years) completed questionnaires measuring power assertive discipline, attachment, and internalizing problems. Power assertive discipline was measured with multiple informants. The mediating and moderating role of attachment was investigated with bootstrapping analyses. **Results.** Complete mediation was found in the entire group and independent of parents' gender. Analyses for separate age-groups confirmed the mediating role of attachment. Power assertive discipline tended to be linked with higher internalizing problems only when early adolescents reported high levels of attachment security. **Conclusion.** Power assertive discipline is associated with internalizing problems and less secure attachment. Most importantly, attachment could explain the association between Power Assertive Discipline and internalizing problems.

INTRODUCTION

Current evidence-based therapeutic and preventive parent management training programs teach parents to discipline their children in response to misbehavior (e.g., Leung, Sanders, Leung, Mak, & Lau, 2003; Webster-Stratton, 2000). Although research has demonstrated that parental disciplining leads children to develop less antisocial behavior (e.g., Eddy, Leve, & Fagot, 2001; Patterson & Stouthamer-Loeber, 1984; Snyder, Cramer, A Frank, & Patterson, 2005; Tremblay, 2000), the question remains whether this benefit generalizes to other areas of psychopathology. More specifically, it is important to know whether discipline has side-effects, such as a clinically relevant emotional cost for the child leading to internalizing problems (Douglas & Strauss, 2007). It can be argued that this lack of insight mainly follows from the absence of one clear definition of disciplining. **Consequently, the disciplining construct has been investigated from a wide variety of definitions and different results lead therefore to an incoherent picture** (e.g., Socolar, 1997; Straus & Fauchier, 2007). The lack of a clear definition also limits our understanding of mechanisms underlying the association between disciplining and psychopathology. For example, the way disciplining is related to attachment is not well-researched. For this reason, the current study aimed to investigate the effect of disciplining on internalizing problems, starting from a clear definition of discipline, and to investigate whether the discipline-internalizing association is explained by attachment.

Power Assertive Discipline

Recent attempts have been made to provide a more encompassing and explicit definition of disciplining. One promising approach distinguishes power assertive discipline and inductive discipline (Straus & Fauchier, 2007). In their model, power assertive discipline consists of corporal punishment, deprivation of privileges, psychological aggression, and penalty tasks (e.g., chores). Inductive discipline consists of diversion, explanations, ignoring misbehavior, reward, and monitoring. This division is interesting, as it acknowledges the positive impact of inductive discipline and suggests that power assertive technique might have less desirable outcomes.

Research confirms this suggestion. The detrimental effect of physical punishment on internalizing problems is generally accepted (e.g., Gershoff, 2002; Straus & Kantor, 1992). Research has also demonstrated an important link between levels of power assertive non-physical punishment and internalizing problems (Lau, Rijdsdijk, Gregory, McGuffin, & Eley, 2007; Liang & Eley, 2005; Van Leeuwen & Vermulst, 2004). As it has been demonstrated that it is the power assertive character of disciplining rather than the physical character of punishment per se that predicts internalizing problems (Larzelere & Kuhn, 2005; Turner & Muller, 2004; Wu, 2007), the current study investigates the effect of power assertive discipline measuring harsh corporal punishment as well as frequent deprivation of privileges or imposing penalty tasks.

Attachment and Internalizing Problems

In our study, we explore the hypothesis that children store frequent experiences with power assertive parents in insecure attachment-related internal working models (Wu, 2007). These internal working models consist at least partly of cognitions or expectancies regarding the availability of the attachment figure (Armsden & Greenberg, 1987; Kerns, Tomich, & Kim, 2006; Waters & Waters, 2006). Working models further determine or influence the way individuals interact with their environment and consequently influence the strategies used to regulate negative affective states across the life-span (Mikulincer, Shaver, & Pereg, 2003). Not surprisingly, longitudinal research has identified attachment insecurity as a significant predictor for the development of anxiety disorders during childhood and adolescence (Warren, Huston, Egeland, & Sroufe, 1997). Insecure working models have been linked with higher levels of anxiety and internalizing problems after exposure to distress (Allen, Porter, McFarland, McElhaney, & Marsh, 2007; Rönnlund & Karlsson, 2006). Furthermore, studies in clinical and non-clinical samples found more severe depressive symptoms in insecurely versus securely attached youngsters (Armsden, McCauley, Greenberg, Burke, & Mitchell, 1990; Kobak, Sudler, & Gamble, 1991; Laible, Carlo, & Raffaelli, 2000; Muris, Meesters, van Melick, & Zwambag, 2001).

Throughout adolescence, attachment relationships undergo important changes as adolescents try to untie earlier bonds to parents in favor of peer relations and become less dependent on parents (Conolly, Paikoff, & Buchanan, 1996). Nevertheless, this does not mean that the parent-child relationship becomes unimportant (Allen & Land, 1999). In fact, from early to mid-adolescence, most teens still turn to parents to solve daily hassles (Hendry, Roberts, Glendinning, & Coleman, 1992), particularly under conditions of extreme stress (Steinberg, 1990) and parents continue to figure as a secure base in adolescence (Nickerson & Nagle, 2005). Most importantly, attachment relationships are particularly relevant during adolescence (Wu, 2007), since this is a period of potential stressful change and turbulence. This stressful context increases the activation of attachment-related internal working models, which makes the impact of insecure attachment in adolescents' life more salient and probably more harmful (Lopez & Brennan, 2000).

Power Assertive Discipline and Attachment

The link between power assertive discipline and attachment has not been studied explicitly. In line with predictions from attachment theory, it has been demonstrated that the quality of both early parent-child interactions and later parent-adolescent interactions are related to the content of internal working models (Karavasilis, Doyle, & Markiewicz, 2003; Sroufe, 2005). Adolescents who are frequently exposed to power assertive discipline are also assumed to develop less secure attachment-related internal working models, which will lead them to turn less to their parents for support when experiencing distress (Wu, 2007). Specifically, less securely attached adolescents have less trust in the availability of their parents (in Bowlby's words: they do not have a *secure base*; Bowlby, 1988; Kerns et al., 2006). In line with these predictions, observed parental harsh punishment has been related to attachment insecurity (Bender et al., 2007) and insecurely attached adults tend to have representations of more punitive parents (Levy, Blatt, & Shaver, 1998). Furthermore, adolescents who report more negatively controlling parenting behaviors, including physical punishment and frequent deprivation of privileges or imposing penalty tasks, report being less securely attached (Bosmans, Braet, Beyers, & Van Leeuwen, 2006).

Power Assertive Discipline, Attachment, and Internalizing Problems

Until recently, research has paid little attention to whether attachment and parenting uniquely contribute to internalizing problems in adolescence. Some studies investigated the mediating role of variables that are closely related to the attachment concept. A study by DeVet (1997) demonstrated that parent-child connectedness mediates the relation between physical punishment and adolescent internalizing problems in females, but was limited due to single-informant adolescent measurement of parental punishment. Therefore, the link between punishment and internalizing problems might have been due to a depression-related reporting bias in the adolescent. Furthermore, the relatively high age of the participants ($M = 18.4$ years) made it difficult to draw conclusions about younger adolescents. A study by Renk, McKinney, Klein, and Oliveros (2006), demonstrated how the retrospective link between parental punitive behaviors and depression is mediated by negative feelings adolescents have about their mothers. However, this study was also conducted in an older sample ($M = 19.8$ years) with only a single-informant measurement of parental punishment. Given these suggestive mediation effects with attachment-related variables, in line with Wu's (2007) assumed close association between power assertive discipline and attachment insecurity, and in line with the association that obtains between attachment and internalizing behaviors, we hypothesized that attachment insecurity mediates the association between power assertive discipline and internalizing problems.

To our knowledge, only one study has tested this specific hypothesis. Doyle and Markiewicz (2005) argued that insensitive parenting behaviors undermine the child's sense of self as valuable and the internal working model of the parent as a secure caregiver (Davies & Cummings, 1994; Petit & Laird, 2002). The associated lack of secure attachment would result in an increase in internalizing problems. However, Doyle and Markiewicz (2005) did not find evidence for this mediation. They attributed the absence of the predicted mediation effect to the Baron and Kenny (1986) approach they used to test mediation and to the low reliability of the parenting questionnaire they used. For this reason, mediation in this study was tested using Preacher and Hayes' (2004a) bootstrapping procedure, which is considered to be the most adequate approach to test mediation (MacKinnon, Lockwood, &

Williams, 2004). Additionally, the current study used a reliable parenting questionnaire, thereby measuring concrete parenting behavior rather than general parenting style, which enabled us to distinguish between the influences of parental acts as such and the quality of the parent-child attachment relationship.

Assessing Power Assertive Discipline, Internalizing Problems, and Attachment

The assessment of parenting behaviors and internalizing problems is influenced by the perspective of the informant (e.g., Jensen et al., 1999; Lanz, Scabini, Vermulst, & Gerris, 2001). Considering power assertive discipline, parents tend to underreport their punishment behaviors (Sessa, Avenevoli, Steinberg, & Morris, 2001), whereas adolescents might over report power assertive discipline when experiencing internalizing problems. As research has indicated that it is important to take into account the congruence between parents' and adolescents' reports to obtain a realistic assessment of parenting behaviors (Lanz et al., 2001), the current study integrates the perspectives of parents and adolescents to measure power assertive discipline. We believe that what is shared by the 2 informants in their view of parental behavior is a much better reflection of the behavior compared to a single informant's view. Maternal power assertive discipline was based on the reports of both mothers and adolescents, and paternal power assertive discipline was rated by fathers and adolescents.

With regard to the assessment of adolescents' internalizing problems, parents are a less reliable source of information than adolescents themselves (Achenbach, McConaughy, & Howell, 1987; Puura et al., 1998; Rubio-Stipec, Fitzmaurice, Murphy, & Walker, 2003). Parents appear to have a different perspective on adolescent internalizing problems for several reasons. First, internalizing problems in adolescence are more difficult to observe than externalizing problems as they are less visible for parents. Second, as adolescents spend significantly less time with their parents, maladaptive functioning remains hidden longer. Third, observers tend to report problems that are experienced as distressing. Internalizing problems often tend to be less distressing for parents as they are for adolescents (for a thorough overview on informant discrepancies, see De Los Reyes & Kazdin, 2005). Recent research has demonstrated that the informant discrepancy is also due to both informants'

depression (De Los Reyes, Goodman, Kliewer, & Reid-Quiñones, 2008). The current study follows the recognition that internalizing problems are preferably measured by the adolescents' perspective alone.

Although attachment has often been considered a categorical construct distinguishing qualitatively different sets of behaviors (e.g., Ainsworth, Blehar, Walters, & Wall, 1978), recent research has questioned these categories (Fraley & Spieker, 2003, Waters & Beauchaine, 2003) and attachment is today measured dimensionally (e.g., Armsden & Greenberg, 1987, Mikulincer & Shaver, 2007; Waters & Waters, 2006).

Age, Gender of the Adolescents, and Gender of the Parents

Longitudinal research has demonstrated that during adolescence the levels of parental demandingness and responsiveness decrease (Paulson & Sputa, 1996). Therefore, one might expect that the frequency of power assertive disciplining on average decreases as adolescents grow older. However, Lansford et al. (2009) found that increasing age revealed different longitudinal trajectories regarding parental mild and harsh physical punishment. One group of parents (20.7% for mild punishment and 38.8% for harsh punishment) displayed continuously high levels of mild and harsh punishment; a second group (48.6% and 33.1%) showed a decrease in levels of mild and harsh physical punishment; and a third group hardly used any physical punishment across adolescence (30.9 and 28.1%). These different subgroups appeared to differ on relevant outcome variables.

Consequently, it is not yet clear whether the mediation mechanism investigated in this study is the same across adolescence and whether associations between the variables under study are influenced by age. First, it has to be established whether power assertive discipline remains strongly associated with internalizing problems across adolescence. For about one-third of the families in this study, Lansford et al. (2009) suggested a decrease in frequency of power assertive discipline which could decrease the strength of its association with internalizing problems. However, a decrease in frequency of harsh punishment, could result in stronger associations with internalizing problems for

adolescents experiencing consistently high levels of harsh punishment. Power assertive discipline would be less normative and therefore potentially more damaging. On average, this means that the negative effect of harsh punishment should remain across adolescence. Second, it has to be established whether attachment plays the same mediating role across adolescence. Interestingly, across adolescence, intrusive parenting behaviors continue to be linked with the quality of the parent-child relationship (Lansford et al., 2009), and attachment security continues to be linked with internalizing problems (Allen et al., 2007; Brown & Wright, 2003). Consequently, we predicted that the same mediation mechanism continues to play a role across adolescence. More power assertive parenting should always have a negative impact on attachment security and lead to more internalizing problems even in older adolescents. To test these predictions, we repeated our analyses after dividing our entire sample in two age-cohorts: 10-15 and 15-18 years. This division created two groups with roughly the same sample sizes, and reflects the rough division between early adolescence on the one hand and middle adolescence on the other hand (Neugarten & Datan, 1973).

We do not expect to find gender differences in adolescence, as the attachment system appears to function the same in boys and girls (Ainsworth, 1991; Marcus & Betzer, 1996; Nickerson & Nagle, 2005). Nevertheless, gender appears to have an important influence on the development of depression, with girls being more vulnerable than boys to develop internalizing problems (Galambos, Leadbeater, & Barker, 2004). A multi-group analysis was carried out to investigate adolescents' gender-related variations in the associations under study. Finally, in spite of the fact that attachment for mother and father might be differently related to maladaptive outcomes (Bosmans, Goossens, & Braet, 2009), research on the links between parenting, attachment, and psychopathology do not reveal parental gender effects (e.g., Bosmans et al., 2006). Nevertheless, to investigate possible effects of parental gender, mediation analyses were studied for the mother and father variables separately.

Moderation

We explored whether a moderation model also helps to explain the interplay between parenting, attachment, and psychopathology. Whereas mediation implies a quantitatively “universal”

mechanism – one that is present for all youth regardless of their levels of attachment security –, moderation implies qualitatively different processes for different sub-groups. In this case, we compared more versus less securely attached youth to investigate whether the 2 groups differ in associations between power assertive discipline and internalizing problems. As we found no previous studies investigating the interaction of parenting and attachment in the prediction of adolescent internalizing problems, we explored the hypothesis that the combination of two maladaptive features would be related to the highest level of psychopathology.

In summary, the present study was designed to increase our understanding of the link between power assertive discipline and internalizing problems in a general population sample. Testing the possible mediating role of attachment is at the same time a test of a basic tenet of attachment theory. Attachment theory predicts that children and adolescents store their experiences with parents in internal working models. Less secure working models are expected to be characterized by insecure attachment cognitions and behaviors, and this should be linked with an increase in internalizing problems. In the present study, we predicted that (1) power assertive discipline will be positively linked with adolescent internalizing problems and that this effect will be mediated by attachment security. We expected this mediation effect to be (2) the same in early and middle adolescence, (3) comparable between mother and father, and (4) similar for boys and girls. Finally, (5) we investigated whether a moderation effect of attachment on the link between parenting and internalizing problems could be demonstrated.

METHOD

Participants

The study was part of a larger research project focusing on parenting behaviors and child characteristics (Van Leeuwen, Mervielde, Braet, & Bosmans, 2004). Participants were recruited via stratified random sampling of elementary and secondary schools. For elementary schools the sample was stratified by province (East and West Flanders), region (rural or urban), school type (public,

private, or catholic schools), and grade. For secondary schools, sampling was based on province (East and West Flanders), type of curriculum (vocational, technical, and general education), and grade. A letter addressed to the parents informed them about the goal and the procedures of the research project. Families were visited at home by a trained psychology student. All participants signed informed consent papers. The present data were gathered during the follow-up measurement, where we had a response rate of 85%.

Participants included 514 Dutch-speaking, elementary and high school students (270 girls and 244 boys), ranging in age between 10 and 18 years ($M = 13.93$ years, $SD = 1.78$), 502 mothers ($M = 41.82$, $SD = 4.45$) and 469 fathers ($M = 44.88$, $SD = 9.86$). Hollingshead-index (Mueller & Parcel, 1981) was calculated based on both parents' level of education and income. These index-scores were compared to the distribution of the index in the general population. Our general population sample balances in socioeconomic status: 12% of the families in the sample were high to moderately high, 68% at the mean, and 20% low in socioeconomic status.

Measures

Power assertive discipline. The Ghent Parental Behavior Scale (GPBS; Van Leeuwen & Vermulst, 2004) is a 45-item self-rating questionnaire, designed to assess current parenting behaviors based on the work of Patterson, who described parenting as observable parental behaviors (Capaldi & Patterson, 1989; Patterson, Forgatch, Yoerger, & Stoolmiller, 1998). The GPBS was completed by both parents and the adolescents: mother behavior was assessed by mother (GPBS-M) and the adolescent (GPBS-AM); father behavior was assessed by father (GPBS-F) and the adolescent (GPBS-AF). For this study we were interested in power assertive discipline. In all previous studies with the GPBS, these two scales load on the same negative control factor (e.g., Van Leeuwen & Vermulst, 2004). Therefore, we combined in our analyses two punishment scales of the GPBS to assess the effect of Power Assertive Discipline: harsh punishment assesses the use of physical punishments (5 items such as: "I slap my child when it has done something forbidden.") and disciplining assesses the frequency of non-physical punishment including deprivation of privileges and imposing penalty tasks

(6 items such as: “If my child does something which was not allowed, I punish him/her by taking away something fun: I do not let him/her watch TV or I give him/her house arrest.”). All items were answered on a 5 point Likert-scale, ranging from 1 (*never*) to 5 (*always*) with higher scores reflecting more frequent harsh punishment or disciplining. The disciplining subscale was reliable for all informants: maternal disciplining reported by mother $\alpha = .84$ and reported by the adolescent $\alpha = .85$; paternal disciplining as reported by father $\alpha = .83$ and by the adolescent $\alpha = .84$. The harsh punishment subscale was adequately reliable for all informants: maternal harsh punishment as reported by mother $\alpha = .59$ and by the adolescent $\alpha = .81$, paternal harsh punishment as reported by father $\alpha = .70$ and by the adolescent $\alpha = .84$. Furthermore, the subscales of the GPBS appear to be related to stress in parenting (Van Leeuwen & Vermulst, 2004), to observed parenting behavior (Moens, Braet, & Soetens, 2007), and to other parenting questionnaires (e.g., Kuppens, Grietens, Onghena, & Michiels, 2009).

For each parent a multi-informant Power Assertive Discipline score was calculated by extracting a factor score. The Maternal and Paternal Power Assertive Discipline variables were measured with the subscales harsh punishment and disciplining. Maternal Power Assertive Discipline was assessed by the adolescent (GPBS-AM) and the mother (GPBS-M), Paternal Power Assertive Discipline by the adolescent (GPBS-AF) and the father (GPBS-F). To investigate whether these variables load together, we first performed a factor analysis using the subscale scores. All intended subscales loaded significantly¹ on Power Assertive Discipline by Mother (One Eigenvalue > 1: 1.79; explaining 44.7% of the variance; loadings ranging from .53-.76) and by Father (One Eigenvalue > 1: 1.77; explaining 44.3% of the variance; loadings ranging from .53-.72).

Internalizing problems. The Youth Self Report (YSR; Achenbach, 1991) is a self-report questionnaire that is administered to the adolescent. Symptoms of psychopathology are assessed with 112 items that were translated in Dutch by Verhulst, Van der Ende, and Koot (1997). On a three point Likert-scale, ranging from 0 (*never*) to 2 (*often*) adolescents indicated the occurrence of each symptom. Items aggregate to eight “syndrome scales.” For the purpose of the current research

questions, we were interested in the internalizing problems syndrome scales withdrawn/depressed, somatic complaints, and anxious/depressed subscales. The YSR is considered a reliable and valid instrument (Verhulst, Achenbach, Van der Ende, et al., 2003). In the present study, Cronbach α 's of the syndrome scales were acceptable: for withdrawn/depressed $\alpha = .72$, for somatic complaints $\alpha = .70$, and for anxious/depressed $\alpha = .85$. An Internalizing Problems score was calculated by extracting a factor score combining the three internalizing subscale scores. These subscale scores loaded significantly¹ on this factor (One Eigenvalue > 1 : 2.05; explaining 68% of the variance; loadings ranging from .52-.81).

Attachment. Attachment to mother and father was measured with a short version of the Inventory of Parent and Peer Attachment (IPPA; Armsden & Greenberg, 1987; translated into Dutch by Noom, Deković, & Meeus, 1999). Adolescents rated each item in the mother and father version on a 4-point Likert-scale, ranging from 1 (*almost never*) to 4 (*nearly always*). Attachment was conceptualized as the quality of the relationship with mother (IPPA-M) and father (IPPA-F) measuring three subscales each: trust (4 items, e.g., "I trust my mother/father"), communication (4 items, e.g., "I tell my mother/father about my problems and troubles."), and alienation (4 items, e.g., "My mother/father doesn't understand what I am going through these days."). The IPPA is not designed to differentiate between attachment patterns, but measures a continuum of secure attachment. Someone who obtains a higher score is more securely attached. The IPPA has been used to assess attachment in adolescents and has been related to a number of theoretically relevant outcome variables (Crowell, Fraley, & Shaver, 1999; Ridenour, Greenberg, & Cook, 2006). In the present sample the subscales were reliable (attachment to mother: trust $\alpha = .73$; communication $\alpha = .71$; alienation $\alpha = .62$; attachment to father: trust $\alpha = .74$; communication $\alpha = .73$; alienation $\alpha = .67$).

For each parent an Attachment score was calculated by extracting a factor score combining the Trust, Communication, and Alienation subscale scores. These subscale scores loaded significantly¹ on an Attachment Towards Mother (One Eigenvalue > 1 : 2.13; explaining 71% of the variance; loadings

ranging from .79-.89) and an Attachment Towards Father variable (One Eigenvalue > 1: 2.17; explaining 72.4% of the variance; loadings ranging from .82-.87).

Plan of the Analyses

First, we computed correlations among all study variables and examined gender differences on 5 variables while controlling for possible age-effects using MANCOVA. Second, we investigated the mediation hypothesis. Figure 1 depicts the hypothesized relations between the variables under study. As described by Baron and Kenny (1986), complete mediation occurs when the initially significant *c* path is reduced to non-significance after adding the *a* and *b* paths (this is called the *c'* path). Following MacKinnon et al.'s (2004) recommendations, we used Preacher and Hayes' (2004a) bootstrapping procedure to investigate our mediation hypotheses for the entire group and for the two age-cohorts separately. This approach is superior to previous approaches, as it additionally tests the significance of the indirect effect (the combining *aXb* path linking Power Assertive Discipline and Internalizing Problems over Attachment). Moreover, bootstrap estimation is not sensitive to violations of normality in our data, that for instance were evident for Power Assertive Discipline. We conducted Structural Equation Modelling (SEM: LISREL 8 software; Jöreskog & Sörbom, 1996) to test the possible moderating effect of gender using multi-group modelling (Bollen, 1989). Finally, we investigated the moderation hypothesis using the centered Attachment and the Power Assertive Discipline factor scores and the product between these two scores (Aiken & West, 1991). Hierarchical Multiple Regression Analyses were computed with Internalizing Problems as the criterion and age and gender as control variables in a first step. In a second step, Power Assertive Discipline and Attachment were entered as predictors. In a last step, the interaction variable was entered.

RESULTS

Preliminary Analyses

Of our total sample, 5% of the families were omitted from the analyses because the data of all relevant subscales were missing. Furthermore, 5% of the data in the remaining sample were missing

completely at random, Little's MCAR test was not significant, $\chi^2(7195) = 3815.67$, *ns*. Therefore, the expectation maximization method was used to estimate the missing data, and $N = 487$ for all

subsequent analyses. Means and standard deviations of the study variables are shown in Table 1.

Gender analyses revealed two effects: (1) boys reported higher levels of Power Assertive Discipline by mother, $F(1,486) = 6.75$, $p < .01$, and father, $F(1,486) = 14.7$, $p < .001$, and (2) girls reported being more securely attached to mother than boys, $F(1,486) = 4.03$, $p < .05$. Inspection of the correlations revealed highly significant correlations between all variables, as predicted. In the total sample, 16.3% of the children obtained a *t*-score of 63 or higher on Internalizing Problems, indicating clinically significant levels of internalizing problems in this general population sample.

One might question the specific role of the physical punishment component in our Power Assertive Discipline measure. Especially in the older age-group, we expected parents to have stopped using physical punishment. To investigate this, we dichotomized for each age-group physical punishment according to mother, child over mother, father, and child over father separately. We created one group in which physical punishment for each item was answered as "never" happening. A second group consisted of participants who acknowledged at least for one item that it occurs at least "seldom". Inspection of our data revealed that in early adolescence 25% (mother-report), 41% (child over mother), 30% (father-report), 42% (child over father) of the participants reported at least infrequent physical punishment. The percentage of participants reporting physical punishment in middle adolescence remained fairly the same: 26% (mother report), 31% (child over mother), 36% (father-report), 36% (child over father)². These high percentages confirm the relevance of investigating physical punishment as a parental disciplining behavior across adolescence.

Attachment as Mediator between Power Assertive Discipline and Internalizing Problems

Following MacKinnon et al. (2004), we used a nonparametric resampling method (bias-corrected bootstrap; Preacher & Hayes, 2004a) with 5000 resamples drawn with replacement from the original sample ($N = 486$) to derive the 99% confidence interval (CI) for the indirect effect. To that end, we used the SPSS macro provided by Preacher and Hayes (2004b). This approach allowed

controlling for any possible confounding effects of age and gender. Mediation analyses were performed for the mother and father variables separately. First we investigated our hypothesis in the entire sample and, then, for the two cohorts separately (see Table 2 for an overview). For the entire sample we found that the original significant effect of Power Assertive Discipline by mother (c path) was reduced to non-significance after adding the indirect pathway (c' path). Because zero is not in the 99% CI for the indirect effect of Attachment, we can conclude that this indirect effect is significantly different from zero at $p < .01$ (two tailed), implying that this variable acts as a mediator. This model explained 17% ($p < .001$) of the variance in Internalizing Problems³. The same mediation effect was found for the model with father-related variables, explaining 10% ($p < .001$) of the variance in Internalizing Problems. The same mediation effects of Attachment towards mother and father were also found in Cohort 1 explaining respectively 21% ($p < .001$) and 9% ($p < .001$) of the variance in Internalizing Problems. In Cohort 2, the association between Power Assertive Disciplining and Internalizing Problems was no longer significant. Consequently, no mediation could occur. The indirect effect remained highly significant in both the mother and father models. These models explained, respectively, 14% ($p < .001$) and 12% ($p < .001$) of the variance in Internalizing Problems.

In all mediation models, gender, but not age, was related to Internalizing problems. To investigate whether gender has an influence on the relations between all the variables under study, a multi-group test was used with boys and girls as different groups. For this purpose we compared a SEM model² where the pathways between the latent variables were assessed separately for boys and girls with a model where the pathways were fixed to be equal across gender. These two models did not differ in quality of fit. This result was the same for the model with the mother variables (SBS- $\chi^2\Delta(3) = 1.39, ns$) and the model with the father variables (SBS- $\chi^2\Delta(3) = .46, ns$). This indicates that the relations among Power Assertive Discipline, Attachment, and Internalizing Problems are the same for boys and girls.

Tests for Moderation Effects

Moderation effects were calculated for the mother and father variables separately. As Table 3 shows, for the entire sample, only the Power Assertive Discipline by Father X Attachment towards Father interaction appeared to be significant. For Cohort 1 (early adolescence), both interaction effects were significant. For Cohort 2 (middle adolescence), no interaction effects were significant. Visual inspection of the interaction effects (see Figure 2), shows that high Power Assertive Discipline predicts relatively more Internalizing Problems only in adolescents who are more securely attached. Post-hoc probing with Hayes and Matthes' (2009) SPSS Macro shows that, for the Entire Sample - father, only the high attachment to father slope was significant (zero was not part of the 95% CI around b : $.74 < b < 2.98$). For Cohort 1 - Mother, no slopes were significant. For Cohort 1 - Father, again, only the high attachment slope was significant (99% CI: $.39 < b < 3.33$).

DISCUSSION

This study investigated the interplay between power assertive discipline and attachment in the explanation of adolescent internalizing problems. With regard to our research questions, the results demonstrated that (1) power assertive discipline is linked with adolescent internalizing problems, and this effect is mediated by attachment security. (2) Comparable effects were found for mothers and fathers, (3) irrespective of the gender of the adolescent. (4) The indirect effect appeared to be significant across adolescence, but only in early adolescence was full mediation was found. Finally, (5) we found some evidence for interaction effects between paternal power assertive discipline and attachment to father. These results provide insight in the processes behind the association between power assertive discipline and adolescent internalizing problems.

Our study confirms that, when parents apply more power assertive discipline, adolescents report higher levels of internalizing problems and report being less securely attached. Importantly, our analyses show that attachment completely explains the relation between power assertive discipline and internalizing problems. These findings should be interpreted with caution. Talking about mediation suggests causal pathways, our data are cross-sectional and we investigated correlations. This allows us only to conclude that what we observe is consistent with what we would expect to see if indeed a

causal path leads from power assertive discipline to internalizing problems over attachment representations (Kraemer, Stice, Kazdin, Offord, & Kupfer, 2001). Future research should investigate these associations using longitudinal research designs.

That said, current findings are important for at least three reasons. They have implications for our understanding of the influences of power assertive discipline, they confirm a basic tenet of attachment theory, and they suggest that attachment is still malleable in adolescence. First, our findings demonstrate that disciplining behaviors related to power assertive discipline have a negative impact on adolescents' well-being. The use of multiple informants in our study strengthens the importance of these results. Ever since Patterson's research on externalizing problems, disciplining has been regarded as beneficial in the development of a child. Our finding confirms the often stated assumption that negative parental control undermines attachment security (e.g., Soenens, Vansteenkiste, Goossens, Duriez, & Niemic, 2008). Note, however, that our data were collected in a sample of adolescents. It has to be verified whether they translate to younger age-groups of children, as it might well be that the investigated disciplining behaviors lead to more internalizing problems due to the fact that they are no longer appropriate for this age-group.

Second, the mediation effects are in line with one of attachment theory's core ideas: Interactions with parents are stored in attachment-related internal working models which are associated with psychopathology. As said, no causal conclusions can be drawn. Even though the paternal correlation pattern is less pronounced compared to the maternal, strength of the demonstrated mechanism is confirmed by the fact that we did find evidence for the same mediation effect in all of our models referring to the relation with mother, with father, and for boys and girls separately. Furthermore, we found an indirect effect from power assertive discipline via attachment to internalizing problems in both early and middle adolescence. In early adolescence, this indirect effect completely explained the power assertive discipline-internalizing problems association. As power assertive discipline was no longer linked with internalizing problems in middle adolescence, no mediation could occur. Although our results do not suggest that the percentage of parents using power

assertive discipline and more specifically physical punishment decreases, it might be that parents use this discipline strategy less frequently. This trend might account for the finding that power assertive discipline is less strongly related to internalizing problems in older adolescents. Nevertheless, power assertive discipline remains to be linked with internalizing problems through its indirect effect on attachment, which confirms our main hypothesis.

The significant correlations between power assertive discipline and attachment suggest that, across adolescence, attachment security is still related to concurrent relational experiences. This finding accords with the low cross-temporal stability of attachment and the idea that attachment working models that are formed early in life are partly updated by new experiences in later life (Bosmans, Braet, & Van Vlierberghe, in press; Fraley, 2007; Thompson & Raikes, 2003). In line with this idea, Bosmans et al. (2010) found that negative attachment schema-related information influences the short-term stability of attachment security and the content of a person's activated attachment schema. Conversely, repeated exposure to positive attachment information has a positive effect on attachment security (Carnally & Rowe, 2006). Offering new relational experiences in a therapeutic context (e.g., Young, Klosko, & Weishaar, 2003), improving relationships with attachment figures (e.g., in Attachment Based Family Therapy; Diamond, Reis, Diamond, Siqueland, & Isaacs, 2002), or strengthening positive relationship memories (e.g., Carr, 1998) are examples of possible therapeutic strategies that might help to lessen the impact of negative experiences with attachment figures on internalizing problems.

We found evidence that in early adolescence the effect of power assertive discipline on internalizing problems depends on the adolescents' attachment to father: when adolescents report being securely attached, they suffer more from their father's power assertive discipline. This interaction points to a form of perceived discrepancy between parent characteristics, in this case a combination of secure attachment together with high power assertive discipline, that has been suggested as detrimental for the child (Aunola & Nurmi, 2004). Although a similar effect was found for mother variables in early adolescence, the interaction effect was less pronounced. No significant

interactions were found in middle adolescence. These findings confirm the increasingly accepted idea that developmental psychopathological research needs to widen its focus to relationships with fathers (e.g., Restifo & Bögels, 2009). The findings suggest additionally that the different effects of mother and father might only be specific to specific age-periods. The current results should be replicated and further investigated to better understand the underlying mechanisms.

The question remains through which mechanism attachment is linked with internalizing problems in adolescence. Several hypotheses have been put forward. For example, Rohner (2004) argued that maladaptive parenting leads to more depression because of experienced rejection. This perspective has the advantage that it is much more parsimonious, as it does not require the complex attachment construct to explain the parenting-depression link. However, recent research has demonstrated that the maladaptive component of insecure attachment is the expectation that one's needs for security, safety, stability, nurturance, empathy, sharing of feelings, acceptance, and respect will not be met in a predictable manner (Bosmans et al., in press). These cognitions are closely related to the acceptance-rejection mechanism proposed by Rohner (2004). Attachment theory has the advantage that it can further explain the development of internalizing problems as a consequence of maladaptive attachment-related affect-regulation strategies (Mikulincer & Shaver, 2007).

Several limitations of this study should be noted. Next to the above-mentioned cross-sectional design, we used the IPPA as it is considered to be a sound adolescent attachment questionnaire with reliability and validity (e.g., Dwyer, 2005; Ridenour et al., 2006; Mikulincer & Shaver, 2007). In spite of the quality of the questionnaire we used, the current results should be expanded in future research as we have not measured dimensions of attachment anxiety and attachment avoidance. Furthermore, our study was limited as we only used questionnaires in our research design. Therefore, future research should incorporate alternative measurement methods. Performance based measures have been developed to measure the influence of attachment on the attentional processing of the mother. Results indicated that less securely attached children orient their attention more strongly towards mother (Bosmans, De Raedt, & Braet, 2007) and have a more narrow attentional field around mother

(Bosmans, Braet, Koster, & De Raedt, 2009). These instruments might prove useful in future research on attachment, as they help avoiding contamination of effects by shared method variance.

Notwithstanding these limitations, the present results turn on several strengths in our research design. (1) The multi-informant measurement of parenting behavior decreases the likelihood that the link between parenting and internalizing problems is only influenced by emotion-related memory biases. Although the size of the effect is relatively small, the statistical approach combining different informants assures that only true relationships are reflected. (2) The multi-informant approach also diminishes the likelihood that the measure of parenting would be contaminated by attachment. (3) Even though research has shown that attachment and parenting are diverse constructs (Richaud De Minzi, 2006), the correlations between parenting styles and attachment found in previous studies often could at least partly be explained by common variance through item or content overlap. In the current study, items measuring harsh corporal punishment and frequent deprivation of privileges or imposing penalty task have no content-overlap with the items measuring trust, communication and alienation.

The present study has implications for clinical practice. Clinicians should exercise care when they propose to use disciplining tactics such as deprivation of privileges or imposing penalty tasks, even in a consequent manner, to counter externalizing problems, as these results suggest that, at least in adolescence, this might have negative side-effects as well. Our findings should be further investigated before advising too strongly against using non-physical power assertive discipline. Research is needed to investigate whether applying non-physical power assertive discipline in combination with parental warmth and involvement has more positive outcomes. Research on the authoritative parenting style advocates in favor of such a balanced perspective (Baumrind, 1996), but all power assertive disciplining behaviors have in common that they do not allow the adolescent the autonomy s/he requires in this developmental phase. Consequently, less controlling and more autonomy-supportive parenting behaviors might have a positive impact on both internalizing and externalizing behavior problems in adolescence as they have a positive impact on attachment security (Soenens et al., 2008).

The mediation effects add to the growing suggestion that merely trying to change parenting behaviors without taking into account the quality of the relationship between parents and adolescents might not have an immediate or sufficient impact on psychopathology, nor on less secure attachment-related cognitions that are associated with power assertive discipline. Our results demonstrate that less secure attachment-related cognitions are associated with internalizing problems and that in older adolescents merely changing parenting behaviors might have no effect at all. The older the adolescent, the more resistant s/he appears to be to parent management oriented treatment programs. This study shows that one of the reasons for the limited therapeutic impact of parent management training might be because cognitions about the quality of the relationship become more important than the actual behaviors of the parents. Therefore, in adolescence it might become increasingly important that therapy focuses on these maladaptive cognitions and on the quality of attachment relationships. After all, research shows that less securely attached children communicate less with their parents about their feelings. Consequently, they become more vulnerable to develop depression (Bosmans, Raes, & Braet, 2010).

In sum, this study tried to increase our insight in the association between power assertive discipline and internalizing problems, and the mediating and moderating role of attachment. Results demonstrate that power assertive discipline is associated with internalizing problems and less secure attachment. Most importantly, attachment could explain the association between Power Assertive Discipline and internalizing problems. Furthermore, Power Assertive Discipline is related to internalizing problems in more securely attached young adolescents. The large sample of families, the use of a multi-informant measurement of parenting behaviors, the use of well-established measures, and the replication of findings across parental gender, gender of the adolescent, and age groups all underscore the results.

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Footnotes

1. This outcome closely relates to the outcome in a Confirmatory Factor Analysis using SEM. Measurement models showed a good fit for the mother model (SBS- $\chi^2(36) = 82.13$, SRMR = .04, RMSEA = .05) and the father model (SBS- $\chi^2(36) = 70.39$, SRMR = .04, RMSEA = .04). More detailed results can be obtained from the authors on request.
2. We investigated the effect of physical punishment at a group level on internalizing problems and on attachment with ANOVA. In each age-group and for each informant the physical punishment group reported lower levels of attachment security (also when different informants was used) and often also higher internalizing problems. More detailed information can be obtained from the authors on request.
3. These results are in line with the results found using SEM. Two models were investigated, for mother and father separately. Fit indices indicated good model fit for both (for mother: SBS- $\chi^2(36) = 82.13$, SRMR = .04, RMSEA = .05; for father: SBS- $\chi^2(37) = 80.15$, SRMR = .05, RMSEA = .05). More detailed results can be obtained from the authors on request.

PUNITIVE PARENTING, ATTACHMENT, AND INTERNALIZING PROBLEMS

TABLE 1

Correlations between All Variables and Descriptive Statistics

	1	2	3	4	5
1. Power Assertive Discipline(m)	1				
2. Power Assertive Discipline(f)	.62**	1			
3. Attachment(m)	-.33***	-.24***	1		
4. Attachment(f)	-.15***	-.20***	.54***	1	
5. Internalizing	.15***	.10*	-.39***	-.30***	1
Boys <i>M</i> :	.12	.18	-.11	-.07	10.49
<i>SD</i>	.99	1.10	.97	.98	7.42
Girls <i>M</i> :	-.11	-.16	.10	.07	11.51
<i>SD</i>	.99	.91	1.02	1.02	7.96

Note. Power Assertive Discipline (m) = Power Assertive Discipline by Mother; Power Assertive Discipline (f) = Power Assertive Discipline by Father; Attachment(m) = Attachment towards Mother; Internalizing = Internalizing Problems

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

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TABLE 2

Overview of Mediation Analyses for the entire sample and the two cohorts separately

		Total sample	Cohort 1	Cohort 2
		<i>B</i>	<i>B</i>	<i>B</i>
Mother	a path	-.34***	-.40***	-.24***
	b path	-.39***	-.41***	-.36***
	c path	.17***	.20***	.10
	c' path	.04	.04	.01
99% CI indirect effect		.07 < < .21	.08 < < .30	.02 < < .20
Father	a path	-.20***	-.20***	-.22**
	b path	-.27***	-.28***	-.30***
	c path	.12**	.14*	.08
	c' path	.06	.08	.02
99% CI indirect effect		.02 < < .11	.01 < < .14	.01 < < .16

Note. *B* = Unstandardized regression weights ; a path = association between Power Assertive Discipline and Attachment ; b path = association between Attachment and Internalizing Problems ; c path = association between Power Assertive Discipline and Internalizing problems ; c' path = association between Power Assertive Discipline and Internalizing problems, after taking into account the indirect effect. * $p < .05$; ** $p < .01$; *** $p < .001$

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TABLE 3

Regression Analyses Testing Moderation Effects

	Entire Sample				Cohort 1				Cohort 2			
Mother	<i>R</i> ² Δ	<i>F</i> Δ	<i>df</i>	β	<i>R</i> ² Δ	<i>F</i> Δ	<i>df</i>	β	<i>R</i> ² Δ	<i>F</i> Δ	<i>df</i>	β
Step 1	.02	4.96**	2,483		.00	.18	2,272		.03	3.07*	2, 207	
Age				.07				-.03				.07
Gender				.10*				.04				.17***
Step 2	.15	44.37***	2,481		.21	34.86***	2,270		.11	12.84***	2,205	
PAD				.05				.06				-.01
Attach				-.39***				-.48***				-.33***
Step 3	.00	1.05	1,480		.01	4.07*	1,269		.00	.73	1, 204	
Interaction				.05				.12*				-.06

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Father											
Step 1	.02	4.96**	2,483		.00	.18	2,272		.03	3.07*	2,207
	Age			.07							.07
	Gender			.09*					.01		.18**
Step 2	.08	22.52***	2,481		.09	12.81***	2,270		.09	10.28***	2,205
	PAD			.08					.08		.03
	Attach			-.29***					-.30***		-.30***
Step 3	.01	5.98*	1,480		.03	7.95**	1,269		.00	.31	1,204
	Interaction			.11*					.17**		.04

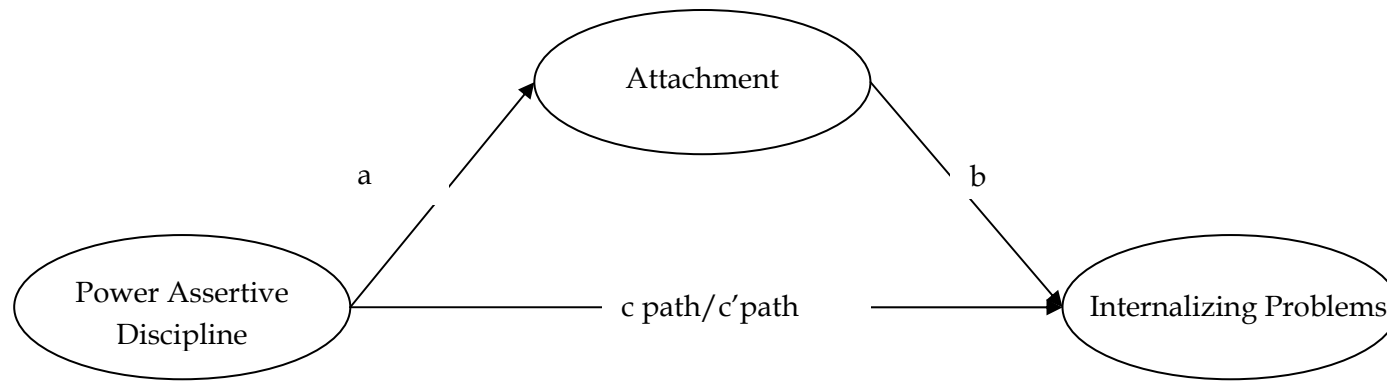
Note. PAD = Power Assertive Discipline; Attach = Attachment; * $p < .05$; ** $p < .01$; *** $p < .001$

PUNITIVE PARENTING, ATTACHMENT, AND INTERNALIZING PROBLEMS

Figure 1: Mediation model: Attachment mediates the effect of Power Assertive Discipline on Internalizing problems

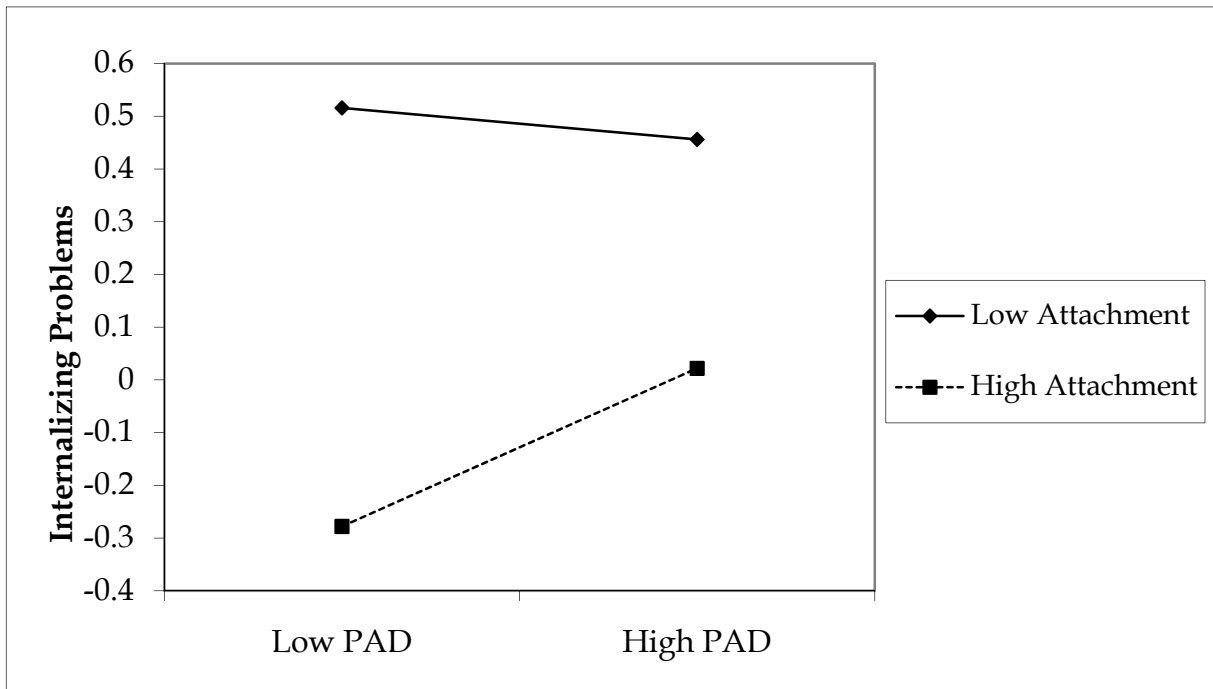
Figure 2: Moderation model: Attachment moderates the effect of Power Assertive Discipline on Internalizing problems

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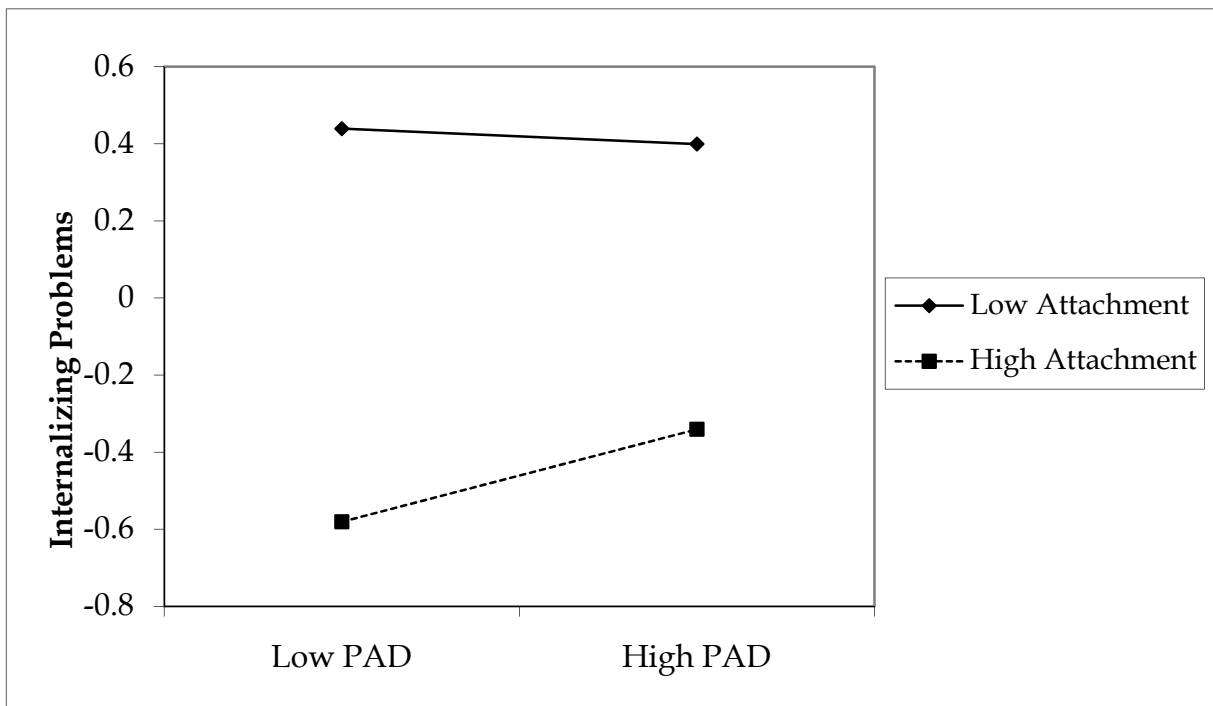


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Entire Sample: Father

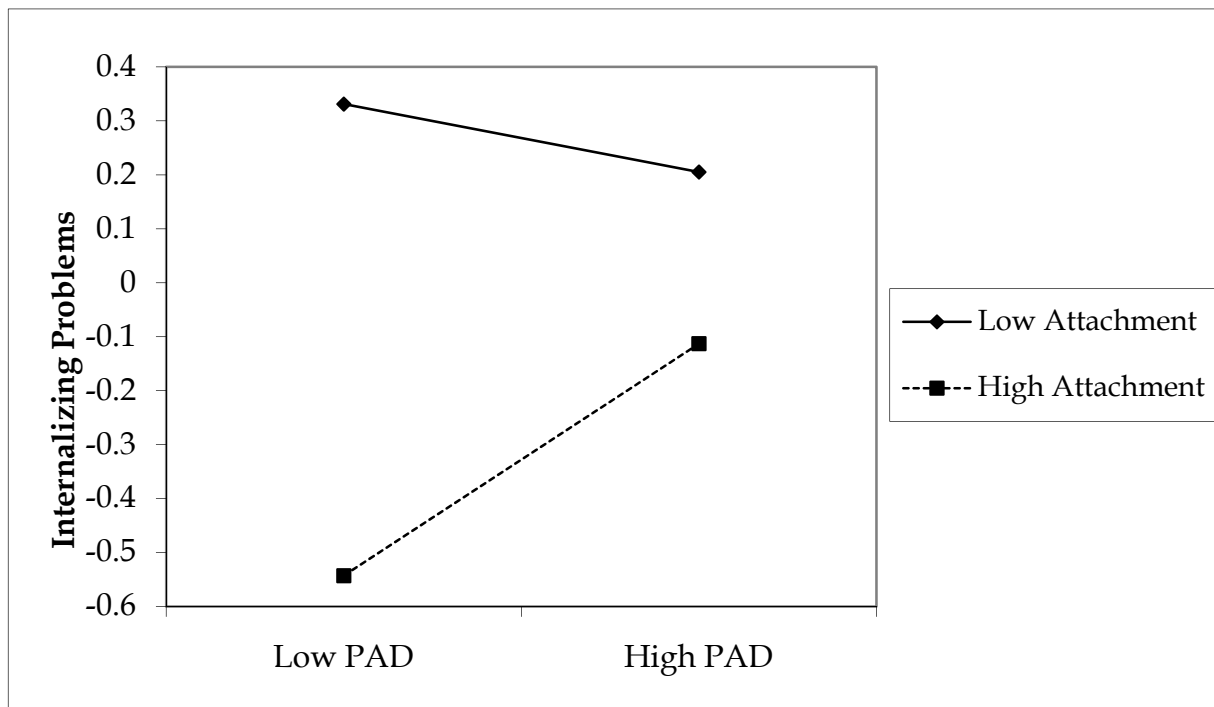


Cohort 1: Mother



PUNITIVE PARENTING, ATTACHMENT, AND INTERNALIZING PROBLEMS

Cohort 1: Father



Note : PAD = Power Assertive Discipline