Correlates of self-reported coercive parenting of preschool-aged children at high risk for the development of conduct problems

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Objective: This study examines the correlates of coercive parenting in a high-risk sample of 305 three-year-old children likely to develop later conduct problems. As parental coercion has been identified as a significant risk factor for future psychopathology, the study sought to identify modifiable inter and intra-personal factors most closely associated with coercion.
Method: Key variables known to place young children at future risk, such as maternal mood states, current child behaviour problems, demographic characteristics such as low income, past mental health problems and parents' sense of competence, were analyzed based on parent-report measures and clinical interviews. Correlational and heirachical regression analysis identified key predictors of coercion.
Results: Three variables emerged as the strongest predictors of maternal coercion: self-efficacy, child behaviour and maternal depression. Demographic factors contributed little to the model.
Conclusions: Enhancing parental self-efficacy, especially specific parenting tasks with disruptive young children has the potential to make a significant contribution toward prevention of future conduct problems.
Key words: conduct problems, parental coercion, self-efficacy.

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Persistent delinquent behaviour is strongly predicted by problems in preschool children such as excesses in aggression/restlessness as well as motor and cognitive deficits [1–3]. These behaviours occur in a broader context of family and societal adversities. Two recent Australian reports by the Australian Government Attorney-General's Department and the Australian Early Intervention Network for Mental Health of Young People, have emphasized the need to intervene in the preschool period [4,5]. Further support for such an approach has come from the evidence that early negative experiences can have effects in shaping brain development [6]. Critical to the success of the early prevention strategies is the identification of modifiable and unmodifiable risk factors. Problems such as low social economic status, adverse family history and single parent status cannot be easily altered. However, concerns such as marital conflict, parent mood states and parenting practices are likely to be amenable to intervention programs. One such example is coercive parenting.

A number of studies have identified parental coercive behaviour (hitting, shouting and scolding) as one of the most important risk factors for future psychopathology, including the emergence of antisocial behaviour. The early work of McCord and Robins identified the link between coercive parenting with antisocial outcomes in adulthood [7,8]. Subsequent work has found a strong association between reports of unfair and harsh discipline in childhood and adult outcomes such as depression and alcohol problems [9]. Patterson has carried out

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detailed investigations of the role of parental coercion in predicting the early onset of delinquent behaviour and found high levels of correlation between coercive parenting and subsequent early arrest [10]. Evaluation of interventions designed to alter parenting functioning have shown strong relationships between the changes in parenting discipline and changes in antisocial behaviour, providing reasonable causal support for the link between coercion and antisocial outcomes [11]. Coercive parenting also increases the risk for less severe adult mental health problems, such as work-related difficulties and problems with intimate and social relationships [12]. One type of coercive parenting, corporal punishment, has been found to be associated with many adverse long-term effects on children's psychological development, such as: depressive symptoms and suicidal ideation in adulthood; later physical abuse of children; and reduced chances for individuals who have completed high school to obtain a higher-level occupation and high incomes [13,14].

Within Australia, there is evidence from community surveys that coercive parenting practices are common. The Western Australian Child Health Survey [15] found that for young children between ages 4–11 years, 21% of parents reported punishing or disciplining their children at least daily. A random digit-dialling telephone survey of Queensland parents asked about the frequency of coercive parenting practices [16]: 70.8% reported they were likely or very likely to shout, while just over 43% reported they were likely or very likely to give a single smack with their hand in relation to management of child misbehaviour.

Identifying the factors (modifiable and unmodifiable) that are associated with coercion can generate a better understanding of coercive parenting practices in the pre-school period. As well, such a process will assist in the design of early prevention programs that are premised on intervening with modifiable contingencies linked with child behaviour problems. A number of studies of pre-schoolers have found a variety of correlates of disruptive behaviour in addition to coercive parenting. These include parental mental states such as anger [17], maternal depressive symptoms [18] and low levels of coping (low self-efficacy) [19–23].

The findings on parental efficacy reinforce the growing literature on the role of parental cognitions, expectations and attributions in the socialization of children [24]. Bandura [25] has argued that task specific self-efficacy (e.g. parental beliefs about their capacity to manage their children's behaviour in specific contexts or times), is more predictive of performance than global self-efficacy. At a practical level, identification of specific demands that parents find difficult, such as appropriate discipline of children, could enable interventions to more effectively target areas in which parents require assistance.

The aim of this study is to explore the correlates of parental coercive behaviour within a high-risk sample of three-year-old children. It is hypothesized that parental coercive behaviour will be significantly related to levels of parental depression and parental self-efficacy after controlling for levels of disruptive child behaviour and parents' social economic status.

Method

Participants

Participants were 305 families with a 3-year-old child. Participants responded to a community outreach campaign that included newspaper stories as well as posters and flyers displayed in child-care centres, kindergartens, preschools and community health centres. The purpose of the campaign was to recruit parents and preschoolers with high-risk characteristics implicated in the early origins of delinquent behaviour, for example, low income, single parent status, and high levels of disruptive behaviour in preschoolers. Selection criteria are described in more detail below. The recruited high-risk sample was incorporated into a randomised trial of a behavioural family intervention strategy involving different strengths of intervention. The study had ethics approval from The University of Queensland and the Queensland Health Department. To increase the probability of screening families that would meet the eligibility criteria of the study (i.e. high-risk families), the campaign targeted three low-income suburbs of Brisbane. Targeted areas had a high proportion of families with young children, juvenile crime and unemployment based on Australian Bureau of Statistics reports [26–28].

The advertisements offered parents with selected preschool children the opportunity of being part of an intervention approach. A standardized telephone interview was used to ensure families who responded to the outreach campaign met the following criteria: (i) the target child was aged between 36 and 48 months; (ii) mothers reported they were concerned about their child's behaviour in response to a specific question; (iii) the child showed no evidence of developmental disorder (e.g. autism) or significant health impairment; (iv) the child was not currently having regular contact with another professional or agency or taking medication for behavioural problems; and (v) the parents were not currently receiving therapy for psychological problems, were not intellectually disabled and reported they were able to read the newspaper without assistance. Subsequently, mothers completed and returned three questionnaires that assessed child behaviour, marital conflict and depression. For inclusion in the study, mothers had to rate their child's behaviour as being in the elevated range on the Eyberg Child Behaviour Inventory (ECBI; intensity score $\geq$127 or problem score $\geq$11 [29]), as well as having at least one family adversity factor.

Eligible families had at least one of the following family adversity factors: (i) maternal depression as measured by a score of 20 or more on the Beck Depression Inventory [30]; (ii) relationship conflict as measured by a score of 5 or more on the Parent Problem Checklist [31]; (iii) single-parent household; (iv) low gross family income

(less than A$345 per week) or low occupational prestige as measured on the Daniel [32] scale which assesses the prestige of occupations in Australia based on a 7-point scale ranging from 1 representing high prestige and 7 representing low prestige. Unskilled labour positions are classified between 5.0 and 7.0 (e.g. assembly worker = 6.2; carpet layer = 5.5) and are correlated with low levels of income and education. In the final sample, 52% of the families had two of the family risk factors previously described, 36% had three and 12% met all of the family risk factors.

Overall, 940 families responded to the outreach campaign. Of these, 216 families met the initial telephone screening criteria but did not return the screening questionnaires that assess the extent of child behaviour problems, marital conflict and maternal depression. Of the remaining 724 families who returned screening questionnaires, 343 families were excluded for the following reasons: (i) child not aged 3 years (37%); (ii) child's behaviour not elevated on the ECBI (17%); (iii) no family risk criteria evident (19%); (iv) family already receiving assistance for their child's behaviour (17%); (v) child had a developmental disorder or significant health impairment (9%); or (vi) parents reported significant literacy problems (1%). The remaining 381 families met all inclusion criteria but 76 families declined to participate, leaving 305 families to take part in the study.

Demographic characteristics of the sample are summarized in Table 1. Parents were predominantly within the lower socioeconomic class [32], Caucasian, with a predominance of male children (68%) and, in most families, both parents were present (73%). In addition, 70% of families included the biological father of the target child, 4% were stepfathers and in 26% of families no father figure was present. Mothers were generally the biological parent of the target child (97%) with the remaining 3% of mothers being either stepmothers, adoptive/foster mothers or absent. On average, mothers were 31 years of age and fathers 34 years. About 40% of mothers and fathers had not completed high school. Overall the sample comprised working class and lower middle class families, with parents in their early 30s. Parents with partners had lived together for approximately 7 years.

Standardized interviews with parents indicated that 40% of families were experiencing financial difficulties. About 7% of mothers and 9% of fathers had a history of drug use while 55% of mothers and 37% of fathers had a family history of psychiatric illness. Twenty percent of mothers and 30% of fathers had a family history of criminal activity. In terms of histories of violence and abuse, 8% of mothers and 4% of fathers reported witnessing at least one violent interaction (i.e. hit partner with hand or object) between their parents in their family of origin. Twenty percent of mothers and 13% of fathers reported that during their childhood, they had been physically abused by their parents (i.e. required medical treatment as a result of being disciplined). Using the Child Abuse Potential Inventory (CAP) [33]; 56% of mothers and 29% of fathers had elevated scored on the abuse scale indicating that these parents were at high risk of physically abusing their own child and may have already done so. Overall, 25 risk factors implicated in the development of children's conduct problems were examined in this study, using standardized questionnaires and interviews. Approximately 60% of the sample reported the presence of five or more of the 25 risk factors for conduct problems, confirming that a sample of children at high risk of developing conduct problems had been recruited.

Table 1. Demographic characteristics of samples (descriptives)

Variable	m	SD
Child's age (months)	40.88	3.62
Mother's age (years)	31.10	5.40
Father's age (years)	34.26	7.17
Father's occupational status†	4.43	1.19
Mother's occupational status†	4.40	0.96
Number of children in family	1.89	0.79
Years together as couple	7.06	4.38

†Based on a 7-point occupational prestige scale where 1 = high [33].

Measures

Family background interview

Mothers and fathers (where applicable) completed a standardized interview about their level of education, any current financial difficulty and characteristics of their family and family of origin. Information was sought on present and prior use of drugs and alcohol, criminal history, history of psychiatric illness and violence in family of origin directed to a parent or themselves. Each of the above issues was addressed during a semistructured interview that required forced choice responses (i.e. Yes or No and frequency ratings).

Parent-report measures

Beck Depression Inventory (BDI) [30]. The BDI, administered to mothers only, was used as a screening measure and completed prior to randomization to comparison groups. The BDI is a 21-item questionnaire that assesses symptoms of depression in adults. It has been extensively used and shown to have good internal consistency ($\alpha = 0.81$ for non-psychiatric samples), moderate to high test-retest reliability (ranging from $r = 0.60$ to $r = 0.90$ for non-psychiatric populations), as well as satisfactory discriminant validity between psychiatric and non-psychiatric populations [34].

Eyberg Child Behaviour Inventory (ECBI) [29,35]. The ECBI is a 36-item, multidimensional measure of parental perceptions of disruptive behaviour in children aged 2–16 years. It incorporates a measure of frequency of disruptive behaviours (intensity score) rated on 7-point scales, and a measure of the number of disruptive behaviours that are a problem for parents (problem score). The ECBI has high internal consistency for both the intensity ($r = 0.95$) and problem ($r = 0.94$) scores, good test-retest reliability ($r = 0.86$), and reliably discriminates between problem and non-problem children [35]. Using the present sample, a moderate level of inter-rater agreement was obtained between mothers and fathers ($r = 0.49$, $p < 0.000$).

Parenting Scale (PS) [36]. This 30-item questionnaire measures dysfunctional discipline styles in parents. It yields a total score based on three factors: laxness (permissive discipline); over-reactivity (authoritarian discipline, displays of anger, meanness and irritability); and verbosity (overly long reprimands or reliance on talking). According to Arnold *et al* [36], the total score has adequate internal consistency

($\alpha = 0.84$), good test-retest reliability ($r = 0.84$), and reliably discriminates between parents of clinic and non-clinic children. The over-reactivity factor is an adequate measure of parental coercion as its content derives directly from the work of Patterson, Reid and Dishon [10] on coercion theory and its place in the genesis of delinquent behaviour.

Parenting Sense of Competency Scale (PSOC) [37]. A 16-item version of this questionnaire was used to assesses parents' views of their competence as parents on two dimensions: (i) satisfaction with their parenting role (reflecting the extent of parental frustration, anxiety and motivation); and (ii) feelings of efficacy as a parent (reflecting competence, problem-solving ability and capability in the parenting role). The total score shows a satisfactory level of internal consistency ($\alpha = 0.79$ [38].

Results

Statistical analyses

Multiple correlational analyses and hierarchical regression procedures were used to examine the relationship between hypothesized parental and parental-adjustment variable and maternal reports of coercive parenting. A multiple correlation table between all potential predictors was examined first to determine the strength of association between different types of predictors. Subsequently, sociodemographic, child adjustment, parental self-efficacy and maternal depression were entered in blocks using hierarchical regression.

Sample characteristic

Table 1 shows that participating children were 40 months old with mothers aged 31 years and fathers aged 34 years. The families were predominantly low income, had 1.89 children and the child's parents had lived together for 7 years.

Association between predictors (Table 2)

A preliminary analysis was conducted to examine the associations between the predictor variables of families' sociodemographic factors, family risk variables and mother's reports of over-reactive parenting. Over-reactive parenting was significantly associated with: mothers' sense of competence ($r = -0.49$, $p < 0.01$); mothers' level of depression ($r = 0.37$, $p < 0.01$); the child's gender ($r = -0.13$, $p < 0.05$); and the level of disruptive behaviour ($r = 0.2$, $p < 0.01$) reported by the mother on the ECBI. Overall, mothers reported more coercive parenting when they were more depressed, had lower self-efficacy, their child was a boy and the child was reported to be more disruptive. The mothers' level of depression was also significantly associated with: her current drug use ($r = -0.13$, $p < 0.05$); levels of disruptive child behaviour ($r = 0.36$, $p < 0.01$); a family-of-origin history of psychiatric problems ($r = 0.21$, $p < 0.01$); and low sense of competence ($r = -0.44$, $p < 0.01$). Mothers' sense of competence was significantly associated with: the mothers' ages ($r = -0.15$, $p < 0.05$); reported levels of disruptive behaviour ($r = -0.24$, $p < 0.01$); maternal depression ($r = -0.44$, $p < 0.01$); the mothers' family-of-origin history of psychiatric problems ($r = -0.18$, $p < 0.01$); and the number of family members with psychiatric disorders ($r = -0.21$, $p < 0.01$).

Predictors of maternal over-reactivity (Table 3)

From the preceding analysis the key hypothesized mechanisms, namely parental self-efficacy and depression, were used to predict over-reactive or coercive parenting, after first controlling for sociodemographic factors and the level of disruptive child behaviour. The sociodemographic variables combined (mother's age, gender of the child, number of children, financial difficulties, marital status and mother's educational level) entered at step 1, were not significant predictors of maternal over-reactivity. After controlling for the level of disruption of the child entered at step 2, which explained 4% of variance, the parents' overall sense of competence was the best predictor of maternal over-reactivity (step 3), explaining an additional 22% of unique variance in levels of maternal over-reactivity. The addition of the mothers' depression (step 4) only explained an additional 2% of variance after accounting for the other variables. Altogether, the hypothesized predictors accounted for 31% of variance.

Discussion

Overall the main hypothesis was supported, namely that parent coercive behaviour (as measured by mothers' over-reactivity) was strongly related to maternal depression and mothers' sense of competence (Table 2). Examination of the relationship between parental coercion and the main independent predictors of parental self-efficacy and maternal depression, showed that maternal self-efficacy explained the largest amount of unique variance in predicting maternal over-reactivity (Table 3). In this model, parental self-efficacy explained 22% of the variance. Maternal depression continued to bring additional variance to the model but at a lower level to child behaviour.

The findings in this study confirmed the importance of parental beliefs and of parental mood states as key predictors of coercive parenting over and above the influence of sociodemographic and child behaviour variables. These results further enhance knowledge of the cognitive parenting variables that may be amenable to intervention. Recently, Sanders *et al.* [39] showed that specific targeting of parent causal attributions enhanced the effects of the Triple P – Positive Parenting Program, a form of behavioural family intervention in mothers at risk of child abuse. The present findings point to the need for further research into the role of parent self-efficacy and child behaviour problems. In particular, there is the need to differentiate between global (overall confidence across all areas of life), domain-specific (parenting, marital and work relationships) and task-specific self-efficacy (mealtimes, bedtime, shopping with children). Clarification of the relationship between these contextual variables and coercive parenting will allow for greater specificity in tailoring parenting interventions to the specific needs of families.

Table 2. Correlations between predictors for over-reactive parenting

	Financial difficulties	Marital status	Mother's age	Mother's education	No. of children	Child gender	ECBI intensity	ECBI problems	Mother's depression	Mother's current drugs	Mother's daily alcohol	Mother's family psychiatric history	No. of family members with psychiatric disorders	Mother's total PSOC	Mother's parenting over-reactivity
Financial difficulties	1 (301)														
Marital status	– 0.012 (301)	1 (306)													
Mother's age	0.137* (299)	– 0.157** (.304)	1 (304)												
Mother's education	0.104 (298)	– 0.125* (303)	0.324** (302)	1 (303)											
Number of children	0.010 (300)	– 0.199** (305)	0.062 (303)	– 0.040 (302)	1 (305)										
Child gender	0.101 (299)	0.067 (304)	– 0.025 (302)	0.075 (301)	0.026 (304)	1 (304)									
ECBI intensity	0.030 (298)	0.023 (303)	– 0.220** (301)	– 0.166** (300)	0.212** (302)	– 0.102 (301)	1 (303)								
ECBI problems	– 0.049 (298)	0.039 (303)	– 0.208** (301)	– 0.179** (300)	0.184** (302)	– 0.055 (301)	0.729** (303)	1 (303)							
Mother's depression	0.041 (295)	0.129* (300)	– 0.069 (298)	– 0.025 (297)	0.063 (299)	0.029 (298)	0.360** (300)	0.329** (300)	1 (300)						
Mother's current drugs	– 0.041 (301)	0.169** (306)	0.078 (304)	– 0.057 (303)	0.136* (305)	– 0.016 (304)	– 0.046 (303)	– 0.073 (303)	– 0.134* (300)	1 (306)					
Mother's daily alcohol	– 0.010 (301)	0.119* (306)	0.204** (304)	– 0.060 (303)	0.107 (305)	0.013 (304)	– 0.131* (303)	– 0.119* (303)	– 0.018 (300)	0.583** (306)	1 (306)				
Mother's family psychiatric history	– 0.045 (301)	0.180** (306)	0.074 (304)	– 0.034 (303)	0.106 (305)	0.107 (304)	0.078 (303)	0.116* (303)	0.206** (300)	0.537** (306)	0.450** (306)	1 (306)			
No. of family members with psychiatric disorders	– 0.002 (301)	0.120* (302)	0.042 (300)	– 0.011 (299)	0.086 (301)	0.130* (300)	0.063 (299)	0.033 (299)	0.177** (296)	0.297** (302)	0.230** (302)	0.576** (302)	1 (302)		
Mother's total PSOC	– 0.023 (293)	– 0.045 (298)	– 0.146* (296)	– 0.031 (295)	– 0.021 (297)	0.018 (296)	– 0.237** (298)	– 0.235** (298)	– 0.445** (295)	0.069 (298)	0.011 (298)	– 0.180** (298)	– 0.212** (294)	1 (298)	
Mother's parenting over-reactivity	0.048 (296)	0.034 (301)	0.024 (299)	0.000 (298)	0.060 (300)	– 0.127* (299)	0.163** (301)	0.196** (301)	0.366** (298)	– 0.084 (301)	0.020 (301)	0.082 (301)	0.083 (297)	– 0.495** (297)	1 (298)
Means (SD)	0.72 (1.685)	1.79 (1.290)	31.10 (5.404)	2.89 (1.013)	1.89 (.794)	1.32 (.468)	154.58 (27.023)	19.38 (6.507)	12.71 (7.801)	0.20 (1.050)	6.76 (13.499)	0.62 (.841)	1.21 (1.595)	56.38 (11.102)	3.544 (.898)

*$p \leq 0.05$; **$p \leq 0.01$; ECBI, Eyberg Child Behavior Inventory; PSOC, Parenting Sense of Competency Scale.

Table 3. Hierarchical regression – dependent variable is mother over-reactivity parent scale

	B	β	95% CI for B		t	r	sr^2	Relative weight
			Lower bound	Upper bound				
Step 1								
Mother's age	0.006	0.036	– 0.015	0.027	0.559	0.048	0.0011	5.7%
Gender of child	– 0.286	– 0.150	– 0.511	– 0.060	– 2.497*	– 0.138	0.0219	69%
Number of children in family	0.051	0.044	– 0.088	0.191	0.723	0.027	0.0018	3.9%
Financial difficulties	0.027	0.051	– 0.035	0.088	0.850	0.044	0.0025	7%
Marital status	0.053	0.075	– 0.034	0.140	1.202	0.045	0.0050	11%
Mother's education	0.032	0.036	– 0.081	0.145	0.557	0.031	0.0010	3.7%
Step 2								
Mother's age	0.013	0.076	– 0.009	0.034	1.165	0.048	0.0046	5%
Gender of child	– 0.270	– 0.142	– 0.494	– 0.047	– 2.386*	– 0.138	0.0193	27.2%
Number of children in family	0.0007	0.001	– 0.140	0.142	0.010	0.027	0.000001	0.03%
Financial difficulties	0.027	0.052	– 0.034	0.088	0.876	0.044	0.0026	3%
Marital status	0.045	0.064	– 0.041	0.131	1.036	0.045	0.0036	4%
Mother's education	0.047	0.052	– 0.064	0.158	0.827	0.031	0.0023	2.2%
Mother ECBI intensity	– 0.0001	– 0.004	– 0.006	0.006	– 0.044	0.147	0.000009	0.8%
Mother ECBI problem	0.029	0.216	0.007	0.053	2.538*	0.195	0.0219	58.5%
Step 3								
Mother's age	– 0.005	– 0.030	– 0.024	0.014	– 0.526	0.048	0.00073	0.5%
Gender of child	– 0.278	– 0.146	– 0.473	– 0.083	– 2.805**	– 0.138	0.0204	6.9%
Number of children in family	0.033	0.029	– 0.090	0.157	0.534	0.027	0.00073	0.2%
Financial difficulties	0.028	0.055	– 0.025	0.082	1.048	0.044	0.0028	0.8%
Marital status	0.014	0.020	– 0.061	0.089	0.364	0.045	0.00036	0.3%
Mother's education	0.025	0.028	– 0.072	0.122	0.510	0.031	0.00067	0.3%
Mother ECBI intensity	– 0.002	– 0.074	0.007	0.002	– 0.986	0.147	0.0025	3.7%
Mother ECBI problem	0.019	0.138	– 0.001	0.039	1.840	0.195	0.0088	9%
Mother PSOC total	– 0.041	– 0.496	– 0.049	– 0.032	– 9.253**	– 0.511	0.2218	86.5%
Step 4								
Mother's age	– 0.003	– 0.020	– 0.022	0.015	– 0.348	0.048	0.00029	0.3%
Gender of child	– 0.295	0.098	– 0.488	– 0.103	– 3.019**	– 0.138	0.0228	4%
Number of children in family	0.022	0.019	– 0.099	0.144	0.361	0.027	0.0003	0.1%
Financial difficulties	0.026	0.049	– 0.027	0.078	0.960	0.044	0.0023	0.6%
Marital status	0.0007	0.001	– 0.074	0.075	0.019	0.045	0.000001	0.01%
Mother's education	0.021	0.024	– 0.074	0.117	0.439	0.031	0.00048	0.2%
Mother ECBI intensity	– 0.004	– 0.112	– 0.009	0.001	– 1.485	0.147	0.0055	5.%
Mother ECBI problem	0.017	0.125	– 0.003	0.037	1.686	0.195	0.0072	7.%
Mother PSOC total	– 0.003	– 0.421	– 0.044	– 0.025	– 7.191**	– 0.511	0.1303	68%
Mother depression BDI	0.021	0.182	0.007	0.035	3.009**	0.379	0.0228	21.8%

*$p \leq 0.05$; **$p \leq 0.005$; ECBI, Eyberg Child Behavior Inventory; PSOC, Parenting Sense of Competency Scale; BDI, Beck Depression Inventory.

There were other strong associations noted in the correlation analysis (Table 2), particularly between the mother's current drug use and alcohol use and past family history of psychiatric disorder. As these findings were not part of the current investigation they were not explored in a systematic fashion in this paper. However, they point to the need to better understand the profile of parents at risk for coercive exchanges with their children. As well, these associations suggest that parenting interventions with high-risk populations may need to either include a drug abuse rehabilitation focus or have the capacity to work with appropriate drug and alcohol treatment services.

This study has a number of limitations. First, the sample was selected from a high risk group. Hence the findings may not be applicable to the general population but more relevant to clinical populations. As a result there may have been an under-estimation of the relationship between the predictor variables and parental over-reactivity. Second, this study involved an analysis of cross-sectional data. As a result of the complex relationship between child behaviour, parent self-efficacy and maternal depression, it is difficult to draw causal inferences regarding relationships between predictor and outcome variables. Third, the above findings relied on parental self-report. However, coercive discipline practices

are hard to capture using expensive observational methodology, as many adverse events are sporadic. Self-report measures are important in their own right as an alternative cost-effective method of recording low prevalence, high amplitude events.

Despite these limitations, the identification of modifiable risk factors within the context of parent-coercive practices further enhances the need for a range of intervention strategies for this difficult population.

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