

## PREDICTING THE CHANGE OF CHILD’S BEHAVIOR PROBLEMS: SOCIODEMOGRAPHIC AND MATERNAL PARENTING STRESS FACTORS

Evelina Viduoliene

*Vytautas Magnus university, Lithuania*

### Abstract

**Purpose:** evaluate 1) whether child’s externalizing problems increase or decrease within 12 months period; 2) the change of externalizing problems with respect to child gender and age, and 3) which maternal parenting stress factors and family sociodemographic characteristics can predict the increase and decrease of child’s externalizing problems.

**Design/methodology/approach:** participants were evaluated 2 times (with the interval of 12 months) with the Parenting Stress Index (Abidin, 1990) and Child Behavior Checklist 1.5–5 years (Achenbach, Rescorla, 2000) questionnaires.

**Findings:** Child’s externalizing problems decreased within 12 months period. There were no effects of child’s age, gender and age\*gender interaction on externalizing problems change within 12 months period. Higher initial level and more negative change within 12 months period of maternal parenting stress related to child characteristics, more stressful events in family life predicted the increase of child’s externalizing problems.

**Research limitations/implications:** maternal parenting stress and child’s externalizing problems are related and may influence each other simultaneously. Child’s externalizing problems decrease within one year period in overall 2–5 years old children group. The change of child’s aggressive behavior and hyperactivity, distractibility should be evaluated individually, separately from each other.

**Practical implications:** maternal parenting stress and child’s behavior problems are closely related to each other, it may be meaningful organize intervention for mothers in order to prevent child’s externalizing problems increase.

**Keywords:** maternal parenting stress, externalizing problems, childhood, toddlerhood, longitudinal research.

**Research type:** research paper.

### Introduction

Externalizing or behavior problems are the most common form of maladjustment in childhood (Dishion, Patterson, 2006), and may be related to maladjustment, socialization, behavioral, academic performance, relationship and acceptance with peers problems in

adolescence and later life (Campbell et al, 2000; Moffit et al, 2002). If externalizing behavior is ultimate and persistent, it may be a risk factor for delinquent behavior in future (Mesman, Koot, 2001).

There is evidence that child’s externalizing problems may decrease with age through childhood to adolescence (Campbell, 1995; Prinzie et al, 2006; Leve et al, 2005). Most significant decrease of behavior problems occurs when child is 3–4 years old as a result of child’s socialization process and cognitive, language, moral development. Child learns how to control his aggression, impulses, desires and more properly expresses his wishes, accepts the rules of eligible behavior. However researchers who study child’s behavior problems and psychopathology in early and middle childhood sustain that child behavior problems remain stable. Despite it may decrease over time, children with more problems stay in the highest levels over time (Baker et al, 2003; Heller et al, 1996). According to these results, the stability and change of child’s externalizing problems should be evaluated with respect to child’s development and his biological age.

It is important to evaluate child’s behavior problems in early childhood as it predicts maladjustment and behavior problems in later life. Also it seems that prevalence of externalizing problems or its evaluation for parents in Lithuania may be problematic area. According to the results of international studies, our country has the leading position of child problems prevalence: Lithuanian parents have evaluated their children as having the most behavioral and emotional problems (Rescorla et al, 2011; Rescorla et al, 2007).

Parenting stress as a psychological reaction to the demands of being a parent has been identified as one of the most common daily concerns faced by parents. Parenting stress arises when the parent’s expectations about the resources needed to meet the demands of parenting are not matched by available resources (Deater–Deckard, 2004, p. 5). Parenting stress is closely related to concurrent child’s emotional and behavior problems and vice versa, influences each other (Mäntymaa, Puura, 2012; Baker et al, 2003). Sometimes it is difficult to evaluate which factor stronger influences the other and the causality. However, it is obvious that higher parenting stress is related to child’s internalizing, externalizing problems, and the more problems has the child, the more parenting stress the parent perceives. It is important to evaluate relationships between child’s problems and parenting stress in toddlerhood and early childhood as higher parenting stress in early childhood predicts child’s behavior problems in preschool age and school years (Abidin et al, 1992; Ashford et al, 2008; Goldberg et al, 1997; Theule et al, 2011; Mäntymaa, Puura, 2012; Baker et al, 2003).

Externalizing problems is more prevalent among boys than girls (Williford et al, 2007) as boys seem to be more hyperactive, more often demonstrate oppositional behavior. Also parents who raise boys perceive more parenting stress than parents who have daughters (Deater-Deckard, 2004; Williford et al, 2007; Perminas, Viduoliene, 2012). Child’s problems as well parent’s functioning, his/her behavior with the child, parenting stress level may be related to child’s health status (Hullmann et al, 2010; Perminas, Viduoliene, 2012; Weinstein et al, 1992). Compared to parents of healthy children, those who raise disabled or chronically ill children are more likely to be

distressed, depressed, restricted in their parenting roles, socially isolated, have more health complains.

As the prevalence of child’s externalizing problems depends on child’s age, gender, health status and stressful family life events, researchers should take into account these variable when evaluate stability and change of child’s externalizing problems, parenting stress and its interrelationship.

**The purposes of this study are** to evaluate 1) whether child’s externalizing problems increases or decreases within 12 months period; 2) evaluate this change with respect to child gender and age, and 3) find which maternal parenting stress factors and family sociodemographic characteristics can predict the increase and decrease of child’s externalizing problems.

### Participants

We have chosen mothers as participants in our study as mothers usually are the primary caregivers (Craig, 2006; Hook, Wolfe, 2012; Craig, Mullan, 2011). Also mothers are more sensitive to notice the minor change of children’s internalizing or externalizing problems than fathers or other persons of child’s close environment.

563 mothers of children aged 2–5 years participated in the study. The age range of the mothers was 21 to 49 years with a mean 32.6 (SD = 5.6) years. Children who were the focus of the mothers’ answers were 281 (50%) boys and 282 girls, with the age means 49 months (SD = 8.6) and 50 months (SD = 8.0), respectively. The level of the mothers’ education is as follows: 262 respondents had received university education (46.5%), college or vocational training – 134 (23.8%), secondary school – 139 (24.7%), less than a secondary school – 28 (5.0%). Marital status: married 422 (75.0%), never married 79 (14.0%), divorced 59 (10.5%), widowed 3 (0.5%). In 453 (80.5%) families child’s parents live together, 110 (19.5%) – separately. 211 (37.5%) participants have no employment at this moment, other 62.5% work full or half day.

### Methods

We used *Parenting Stress Index* (PSI, Abidin, 1990), the most widely used measure of the parenting stress (Deater–Deckard, 2004). PSI has Child domain scale which evaluates those aspects of parenting stress that arise from the child’s behavior (hyperactivity, distraction, child’s mood, child’s demandingness, etc.). Also PSI has Parent domain scale which evaluates those aspects of parenting stress that arise from within the parent (sense of parental competence, role restriction, parent’s depression, relationship with spouse, social isolation and parent’s health). Also PSI evaluates Family life stressors that are often beyond parent control (eg., loss of the job, death of a close family friend). The reliability coefficients for these two domains were 0.92, 0.93 at first time (T1) and 0.92, 0.95 at second time evaluation (T2), respectively.

*Child behavior Checklist 1,5–5* (Achenbach, Rescorla, 2000) consists of 99 items and was used as an instrument evaluating child’s externalizing (attention, aggressive

behavior) problems. Externalizing problems refer to behavior problems in this research and may be used as synonyms in article. Cronbach’s  $\alpha$  for Externalizing problems scales were 0.90 (at T1) and 0.92 (at T2).

We asked additional information about sociodemographic characteristics: child’s and mother’s age, time period child is attending the kindergarten, mother’s education (lower (secondary school) vs. higher (vocational training, university)), mother’s employment status (works full of half day vs. does not work), family income status (having sufficient income vs. not having sufficient income), family status (child’s parents live together vs. child’s parents live separately), mother’s pregnancy and child’s health status (child is ill more often than other children vs. child’s health is like others or child is more healthy than others).

### Procedure

Mothers were asked to answer questions of the PSI in consideration of child and answer questions concerning demographics and child’s health status. The questionnaires were anonymous and participants gave them back in envelopes, however, participants were asked to compose the unique code (related to demographics of each participant) in order to link the 1<sup>st</sup> evaluation with the 2<sup>nd</sup> evaluation which was performed 12 months later.

### Results

As children up to 3–4 years may have more behavior problems and it may decrease more significantly within one year period, we evaluated the change of externalizing problems in younger (aged 24–41 months (2–3.5 years), N=120) and older children (aged 42–69 months (3.5–6 years), N=443) groups.

Results of repeated measures ANOVA revealed significant decrease of externalizing problems in overall sample: time 1 evaluation mean 13.1, time 2 evaluation mean 12.4,  $F(1, 559)=4,601$ ,  $p=.032$ ,  $\eta^2=.008$ . However, there were no significant age ( $F(1, 559)=1,467$ ,  $p>.05$ ,  $\eta^2=.003$ ), child’s gender ( $F(1, 559)=2,221$ ,  $p>.05$ ,  $\eta^2=.004$ ) or age\*child’s gender ( $F(1, 559)=.011$ ,  $p>.05$ ,  $\eta^2=.000$ ) effects for externalizing problems change.

Also the change of stressful life events in family life within 12 months period was evaluated in order to assess if there were any major family life changes that may have impact on child’s externalizing problems or maternal parenting stress. Results of repeated measures ANOVA did not revealed any significant changes of stressful life events in overall sample ( $F(1, 559)=1,189$ ,  $p>.05$ ) or with respect to child’s age or sex status ( $F(1, 559)=1,563$ ,  $p>.05$ , and  $F(1, 559)=0,042$ ,  $p>.05$ , respectively).

Children whose externalizing problems scale score increased within 12 months period (T2–T1 score >0) were assigned to Increased group (N=238), others were assigned to Decreased externalizing problems group (N=325).

Correlations between variables and comparisons concerning initial scores of child’s externalizing problems, maternal parenting stress scales between Increased and Decreased participant groups were evaluated in order to have a view about the initial status of problems and stress level in these groups.

Pearson’s correlations coefficients of the variables are presented in table 1. The change of child’s externalizing problems score (T2–T1) may be a positive (if externalizing problems increase within one year) or negative (if externalizing problems decrease within one year). The change of externalizing problems score is positively correlated to T2 externalizing problems, both T2 parenting stress domains and both the change of parenting stress domains scores, and negatively correlated to T1 externalizing problems, both T1 parenting stress domains scores. This means that the more externalizing problems had the child and the more parenting stress perceived the mother at T1 evaluation (higher score), the more significant decrease of externalizing problems and parenting stress level was within one year period (lower or negative score).

**Table 1. Correlations between externalizing problems and maternal parenting stress variables.**

	1. Externalizing problems, T1.	2. Externalizing problems, T2	3. Change of Externalizing problems	4. Parenting stress, child domain, T1	5. Parenting stress, parent domain, T1	6. Family life stressors, T1	7. Parenting stress, child domain, T2	8. Parenting stress, parent domain, T2	9. Family life stressors, T2	10. Change of parenting stress, child domain	11. Change of parenting stress, parent domain
1.	1.0										
2.	.440*	1.0									
3.	-.446*	.477*	1.0								
4.	.544*	.309*	-.184*	1.0							
5.	.410*	.222*	-.128**	.645*	1.0						
6.	.072	.053	.120	.042	.169*	1.0					
7.	.312*	.548*	.267*	.404*	.331*	.073	1.0				
8.	.203*	.324*	.150*	.348*	.495*	.100***	.645*	1.0			
9.	.158*	.113**	.018	.068	.086***	.289*	.044	.062	1.0		
10.	-.205*	.191*	.410*	-.516*	-.239*	.050	.493*	.252*	-.024	1.0	
11.	-.176*	.111**	.265*	-.240*	-.402*	-.042	.321*	.529*	-.015	.482*	1.0

Note: significant at \*p<.001, \*\*p<.01, \*\*\*p<.05 level.

The results of independent samples t tests presented in table 2 reveal that participants with increased externalizing problems had lower initial problems and parenting stress related to child characteristics scores.

**Table 2. Comparison of initial levels of externalizing problems and parenting stress between increased and decreased externalizing problems children groups.**

	Mean (st.deviation)		t	p
	Externalizing problems decreased	Externalizing problems increased		
Externalizing problems at T1	14.4 (6.3)	10.2 (5.3)	8.58	<.001
Maternal parenting stress, child domain at T1	101.5 (18.5)	97.5 (18.2)	2.54	.011
Maternal parenting stress, parent domain at T1	119.8 (22.0)	116.5 (22.6)	1.75	n.s.
Family life stressors at T1	6.8 (6.8)	6.8 (6.7)	-.14	n.s.

Note: T1 – 1<sup>st</sup> evaluation, T2 – 2<sup>nd</sup> evaluation after 12 months. N.s. – not significant.

**Table 3. Predicting child’s externalizing problems increase within 12 months period: final model.**

Predictor variable	B (SE)	Odds ratio	p
Child gender (h.c.=male)	-0,153 (0,214)	0,858	n.s.
Child age	0,005 (0,016)	1,005	n.s.
Time-period attending kindergarten	0,005 (0,012)	1,005	n.s.
Mother’s age	0,012 (0,019)	1,012	n.s.
Mother’s education (h.c.=lower education, secondary school)	0,261 (0,239)	1,299	n.s.
Mother’s employment status at T2 (h.c.=works full/half day)	0,298 (0,226)	1,347	n.s.
Family income status at T2 (h.c.=having sufficient income)	-0,163 (0,292)	0,849	n.s.
Family status at T2 (h.c.=child’s parents live together)	-0,270 (0,278)	0,763	n.s.
Child’s health status at T2 (h.c.=is ill more often than others)	-0,669 (0,358)	0,512	n.s.
Mother’s pregnancy at T2 (h.c.=pregnant)	-0,887 (0,408)	0,412	0,030
Externalizing problems at T1	-0,234 (0,027)	0,791	<0,001
Maternal parenting stress, child domain at T1	0,075 (0,011)	1,078	<0,001
Maternal parenting stress, parent domain at T1	-0,010 (0,007)	0,990	n.s.
Family life stressors at T1	-0,012 (0,016)	0,988	n.s.
Change (T2-T1) of maternal parenting stress, child domain	0,076 (0,009)	1,079	<0,001
Change (T2-T1) of maternal parenting stress, parent domain	-0,011 (0,007)	0,989	n.s.
Family life stressors at T2	0,043 (0,018)	1,044	0,017
Constant	-4,245 (1,208)	0,014	<0,001

Notes: h.c. = category in brackets is a higher category. N.s. – not significant.

For evaluating the hypothesis of child’s externalizing problems change (decreased vs. increased within 12 months period), binary logistic analysis was conducted with separate blocks for each group of predictor variables: 1) sociodemographic variables, 2) initial level (T1) of child’s externalizing problems, 3) initial level of maternal parenting stress and 4) maternal parenting stress change (T2–T1) during 12 months period variables. A logistic regression with child’s externalizing problems change status (decreased vs. increased) was statistically significant,  $\chi^2(3, 17)=193,713$ ,  $p<0,001$ , Nagelkerke pseudo  $R^2=0,391$  for the final model with all predictor variables. The reference (comparison) category for child’s externalizing problems change status was the decrease of externalizing problems (T2–T1 difference of externalizing problems score is equal to “0” or negative). Odds ratios and other statistics for final model are presented in table 3.

In this model, the absence of mother’s pregnancy at Time 2 evaluation (odds ratio (OR)=0,412, 95% confidence interval (CI)=0,185–0,918), lower initial level of child’s externalizing problems (OR=0,791, 95% CI=750–835), more parenting stress concerning child characteristics at T1 (OR=1,078, 95% CI=1,054–1,103), less positive or more negative change within 12 months period of parenting stress concerning child characteristics (OR=1,079, 95% CI=1,059–1,099) and more family life stressful events within past year (OR=1,044, 95% CI=1,008–1,082) predict the increase of child’s externalizing problems. Exposure of other sociodemographic variables, initial level and the change of parenting stress concerning maternal characteristics, initial level of family life stressors do not significantly contribute to the risk of externalizing problems increase.

## Discussion

The results of this study showed the decrease of externalizing problems within 12 months period in 2–5 years old children sample. These results are similar to those other researchers have presented (Campbell, 1995; Prinzie et al, 2006; Leve et al, 2005). However the decrease of behavior problems in our study is relatively very small (effect size of 0.2 are considered small (Cohen, 1988)), in this case the effect size reaches only 0.008). Although the change of externalizing problems was statistically significant, it was small because the participants in this study were normally developing children’s sample, with no major stressful events in family life, so the change effect was small.

There were no significant effects of child’s age\*gender interaction on change of behavior problems. Other authors mentioned that there was decrease in aggressive behavior after toddlerhood period. Trembay (2000), Caron et al (2006), Frick et al (1993), Stormshak et al (2000) propose that different forms of behavioral problems (hyperactivity, distractibility, attention problems vs. Aggressive behavior) may have different etiology, among which are cognitive control deficits and genetic influences. In this study aggressive behavior and attention, distractibility problems were evaluated together, so the decrease in different age groups may occur because of this factor.

Consistent with others (Abidin et al, 1992; Ashford et al, 2008; Theule et al, 2011; Mäntymaa, Puura, 2012) we have found that maternal parenting stress related to child characteristics as well stressful events predict the increase of externalizing problems. The results show that maternal parenting stress and child’s behavior problems may be contemporaneously related to each other as the 274stma274274a change (greater increase or more slender decrease) predicts the increase of behavior problems. Mother’s pregnancy at 2<sup>nd</sup> evaluation was evaluated as potential stressful event for family, but the pregnancy during 2<sup>nd</sup> evaluation predicted the decrease of child’s behavior problems. It could be related to reduced mother’s reactivity towards child’s behavior problems.

Blader (2006) presented the results of his study and 274stma274 that the 274stma274274 and most sustained decreases in externalizing behavior arose among children 274stma parents reported high parenting stress at 1<sup>st</sup> time 274stm of evaluation and low parenting stress after one year, and parenting stress 274stma274274 were not attributable to 274stma274274 in behavioral symptoms. In this study we also determined that decrease of externalizing problems was related to higher initial externalizing problems and parenting stress levels. It is possible that 274stma274 who perceive more parenting stress are more sensitive to the 274stma274 situation concerning child’s behavior, they may change their behavior and child rearing practices, and child’s behavior problems decreases as the result. It would be interesting and meaningful to evaluate parenting style’s as mediator’s role between parenting stress and child outcomes one year past.

## Conclusions

Child’s externalizing problems decreased within 12 months period.

There were no effects of child’s age, gender and age\*gender interaction on externalizing problems change within 12 months period.

Higher initial level and more 274stma274274a change within 12 months 274stma274274ar maternal parenting stress related to child characteristics, more stressful events in family life predicted the increase of child’s externalizing problems.

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