

Mothers' estimates of their preschool children and parenting stress

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Abstract

The present study investigates whether the results of the study of Willinger and Eisenwort (2005) could also apply to a sample of preschool children not referred to a tertiary medical institution. Moreover, we were interested in the accuracy of maternal estimates of their children's development regarding vocabulary for parenting stress, regarding behavioural problems, intellectual development, age and gender of the child. 108 children between the ages of three and six and their mothers were investigated by several diagnostic scales concerning child development with respect to language, motor and intellectual development as well as child behavioural problems and parenting stress concerning child and parent characteristics. The mothers' estimates regarding the children's vocabulary were assessed by the same vocabulary test used for the children by presenting the test as questionnaire to the mothers. There was a significant trend towards an overestimation of a child's developmental functioning regarding vocabulary. Group comparisons between groups of different levels of maternal overestimations (mild, moderate and severe overestimation) of their child's language development with respect to parenting stress levels considering age, sex, intellectual development and child behaviour problems showed the lowest parenting stress level regarding child characteristics in the group of severe overestimation and the highest level of parenting stress regarding parent characteristics in the group of mild overestimation. Significant influences of child behaviour and intellectual level on parenting stress were found.

The results showed that mothers should not be used as only source of information about their children's developmental status, especially with respect to their active vocabulary. However, maternal overestimation seems to have a positive impact on parenting stress regarding child character-

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istics, which could possibly be explained as a defense mechanism, by cognitive dissonance or by mothers being the extended identity of their children.

Key words: mothers' estimates, child behaviour problems, parenting stress, vocabulary

Introduction

Parenting stress seems to be a function of certain prominent child characteristics, parental characteristics and situational variables, directly related to the role of being a parent (Abidin, 1976; 1995). Children with developmental delays create multiple parenting challenges (Baker et al., 1997). In general, families develop positive ways of coping with such challenges and demonstrate considerable resilience (Turnbull et al., 1993). Additionally, parents also have reported greater stress and depressive symptoms, especially in domains related to child rearing (Fidler et al., 2000; Pearson et al., 2000; Hauser-Cram et al. 2001; Olsson & Hwang, 2001). While stress has traditionally been viewed as a result of developmental delays *per se*, or of the increased demands resulting from the child's needs of support, the influence of behavioural problems may have been underestimated. In families where a child has a cognitive delay, parenting stress levels appear to be highest in the childhood years (Baker & Blacher, 2002). This parenting stress appears to be more attributable to behavioural problems of the child, than to the presence of cognitive delays *per se* (Baker, Blacher, Crnic, & Edelbrock, 2002; Baker et al., 2003).

Baker et al. (2002) examined child behaviour problems in 225 3-year-olds with and without developmental delays. Children with developmental delays exhibit significantly higher behavioural problems at this young age. Mothers scored behaviour problems on the *Child Behaviour Checklist (CBCL)* in the clinical range for 26.1 % of the children in the delayed group and only 8.3 % of the non-delayed group. Moreover parents in families in the delayed group perceived greater child related stress, and behaviour problems actually had a greater significant influence on parental stress levels than the children's actual cognitive functioning. Externalized behaviour problems tend to be stable throughout childhood, especially when they emerge early (Shaw, Lacourse, & Nagin, 2005). Associated with heightened parenting stress in families of both typically developing children (e.g. Deater-Deckard, 1998) and children with delayed development (Hastings, Daley, Burns, & Beck, 2006), child behaviour problems can be viewed as a chronic stressor of parents.

Eisenhower et al. (2009) found that mothers of three years old children with delayed development presented poorer concurrent and later physical health than mothers of children with typical development. Furthermore, analyzing child development status (delayed development versus typical development) and child behaviour problems simultaneously, revealed child behaviour problems and an interaction of development status and behavioural problems, but the child's development status itself did not predict maternal health.

Parents of children with intellectual disabilities often also report more parenting stress than parents of children developing normally (Fidler et al., 2000; Hauser-Cram et al., 2001; Baker et al., 2003; Emerson, 2003). The parenting stress presented by parents of children with intellectual disabilities tends to be chronic (Glidden & Schoolcraft, 2003) and has been associated with many negative outcomes, such as parent depression (Hastings et al., 2006), marital conflict (Suárez & Baker, 1997; Kersh et al., 2006), poorer physical health (Oelofsen & Richardson, 2006), less effective parenting (Baker & Heller, 1996) and increased child behaviour problems (Baker et al., 2003).

Developmental disabilities are often presented in young children as delays in the acquisition of expected developmental milestones in language, cognition, adaptive, fine and gross motor development (Malihi et al., 2005). Maternal estimates of her child's level of developmental functioning seem to be a helpful resource of early detection of developmental delay (Pulsifer et al., 1994). Several studies have shown that maternal reports provide a good indication of the developmental status (Glascoe & Dworkin, 1995). Glascoe (1994) showed that parents who reported concerns about speech, language, fine motor or cognitive skills had children with an 80 % chance of failing standardized developmental screening. In comparison, parents, who felt that their children were developing normally or who had concerns only about child behaviour, autonomy or socio-emotional development, had children with a 94 % chance of passing screening. Malihi et al. (2005) investigated the accuracy and clinical utility of maternal estimations of mental age in young children (16 to 60 months) referred for developmental assessment. The results indicate that mothers showed a relatively accurate estimation of their children's developmental age. About half of the mothers estimated within +/- 10 IQ points of the child's actual IQ. While estimated IQ and actual IQ were likely to be correlated highly, mothers showed a tendency to overestimate their children's functioning. However, Malihi et al. (2005) stated that the overall age estimate reported by mothers did not provide specific information about the child's functioning in different developmental domains for detecting relative strengths and weaknesses. However, they suggested that parental estimates may be helpful adjuncts to routine assessment and should not be used as an alternate to developmental assessment (Malihi et al., 2005).

Willinger and Eisenwort (2005) investigated maternal estimates considering vocabulary and gross-motor skills by comparing the results of diagnostic tests administered to both the children and their mothers in a sample of 55 children with a specific language impairment. They found a significant tendency towards a general overestimation of a child's developmental functioning regarding vocabulary and gross-motor skills with all of the mothers showing an overestimation of their children's active vocabulary. Group comparisons between actual and estimated skills showed significant differences in both the active vocabulary and the gross-motor skills. The authors suggested that their results supported the scepticism to the use of maternal estimates as the only source of information concerning the development of a child – at least for children's developmental status considering vocabulary and gross-motor skills in children with language disorders.

In the present study we aimed to investigate whether the results of the study of Willinger and Eisenwort (2005) could also apply to a sample of non-clinical-referred preschool children. Therefore, the actual result of the child regarding vocabulary was compared

with the maternal estimate of her child's vocabulary, using the same instrument for the mother and the child. Moreover, we were interested in the meaning of maternal estimates of their children's development regarding vocabulary for parenting stress considering behaviour problems, intellectual development, age and gender of the child.

Methods

Subjects

108 children, between the ages of three and six, were recruited in several preschools of Vienna. The sample was composed of 52 (48 %) boys and 56 (52 %) girls with a mean age of 55.9 months ($SD = 9.5$ months) and a mean position of sibship of 0.9 ($SD = 0.7$). Forty (37 %) children were only children, 52 (48 %) had 1 sibling, 12 (11 %) had 2 siblings, and 4 (4 %) had 3 siblings. The children's mean total IQ was 111.3 ($SD = 15.7$), the mean T -value regarding expressive language abilities with respect to vocabulary was 45.3 ($SD = 32.4$), the morphology was 50.3 ($SD = 12.1$), the mean T -value regarding the receptive abilities with respect to syntax was 54.9 ($SD = 11.1$), and the mean standard values of receptive vocabulary was 101.0 ($SD = 19.6$). The mean T -value regarding total behaviour problems was 52.1 ($SD = 8.7$), the mean percentile-value regarding parenting stress caused by child characteristics was 41.7 ($SD = 17.3$), caused by parent characteristics was 36.4 ($SD = 15.4$), and regarding life stressors was 62.6 ($SD = 22.5$).

The mean age of the mothers was 33.8 years ($SD = 4.9$). Regarding educational level, 34 (31 %) mothers had left school after the compulsory 9-year school program, 18 (17 %) mothers had graduated from a 2- or 3-year high-school program, 38 (35 %) mothers had a 4- or 5-year high-school program with a school leaving examination, and 18 (17 %) mothers held a university degree.

Materials

Information about actual language development regarding vocabulary, and grammar (both expressive and receptive) was assessed in both samples with the *Active Vocabulary Test regarding 3-6 years old children* (*Aktiver Wortschatztest*; Kiese & Kozielski, 1996), *Evaluation of Language Development regarding 3-5 years old children* (*Sprachentwicklungstest für 3- bis 5jährige Kinder*; Grimm et al., 2001), *Peabody Picture Vocabulary Test – 3rd Edition* (*PPVT-III*; Dunn & Dunn, 1997).

Child behaviour was measured by the German version (Döpfner et al., 1994) of the *Child Behaviour Checklist/4-18* (Achenbach, 1991) which consists of two sections, *Child's competence* and *Child's behavior and emotional problems*. The present study only considered the scales of the *Child's behavior and emotional problems*-section. The 118 behaviour problem items, to be assessed by the parents, refer to the eight syndromes *withdrawn, somatic complaints, anxious/depressed, social problems, thought problems,*

attention problems, delinquent problems, aggressive behaviour and the scale *other problems*.

Information about self-reported parenting stress was gathered by the German version (Willinger et al., 2005) of the 120 items of the *Parenting Stress Index (PSI)* (Abidin, 1995), which has two domains and one score considering life stress. The *child domain* (47 items) reflects child characteristics which may be a cause of stress in the parent-child system. High scores in the *child domain* may be associated with children who display qualities that make it difficult for parents to fulfill their parenting roles. The *child domain* includes measures of the child's adaptability, acceptability to parent, demandingness/degree of bother, mood, distractibility/activity, and ability to reinforce the parent.

The *parent domain* (54 items) entails parent attributes which may be associated with high levels of family stress. Elevated scores suggest that the sources of stress and potential dysfunction of the parent-child system may be related to dimensions of the parent's functioning. The *parent domain* includes measures of depression, attachment to child, restrictions imposed by parent role, sense of competence, social isolation, relationship with spouse, and parent health.

The scale *life stress* (19 items) indicates an index of the amount of stress that the parent is currently experiencing and that is outside the parent-child relationship and often beyond their control (e.g. the death of a relative, the loss of a job).

The mother's estimates regarding vocabulary were assessed, independently of the child's diagnostic process, at the same time by the same test (*Active Vocabulary Test regarding 3-6 years old children*; Kiese & Kozielski, 1996) as used for their children. The test was presented as questionnaire and scored like those used for the children (Willinger & Eisenwort, 2005).

Statistics

Group differences between the actual functioning of the children and the estimates of their mothers were tested for significance by univariate *t*-tests (paired) and contingency tables.

Regarding the accuracy of maternal estimates, three groups were formed under the consideration of the distribution of the differences between the actual functioning of the children and the maternal estimates of the expressive vocabulary. In order to have three groups of similar size we splitted at about 33 % and 66 % of the sample. The three groups regarding the maternal estimates of expressive vocabulary were characterized by mild overestimation (0 to 21 points difference between the child's actual functioning and maternal estimates), moderate overestimation (22 to 35 points difference) and severe overestimation (36 and more points difference).

Group differences between the three groups of different accuracy of estimation with respect to the expressive vocabulary (mild overestimation/moderate overestimation/severe overestimation) under the consideration of the total IQ, total behaviour problems, age and gender of the child as covariates were analyzed by ANCOVA with the

child and parent domain as dependent variables and the three groups as independent variables.

The cut-off level for statistical significance was set at $p < 0.05$, 2-tailed. All statistical analyses were performed by SPSS for Windows, Version 15.0.

Results

All of the mothers (100 %) significantly showed an overestimation of their children's active vocabulary ($\chi^2 = 210.056$, $df = 2$, $p \leq 0.000$). Group comparisons between actual and estimated skills showed significant differences in the active vocabulary (t -value = -19.9 ; $df = 107$; $p \leq 0.000$) with an overestimation of their children's language abilities. Details are shown in Table 1.

Significant differences were found between the three groups regarding the accuracy of maternal estimation of expressive vocabulary (mild overestimation/moderate overestimation/severe overestimation) with respect to the parenting stress regarding child characteristics ($F(6,90) = 4.5$; $p = 0.001$) and regarding parent characteristics ($F(6,90) = 2.4$; $p = 0.031$) under the consideration of age, gender, total IQ and total behaviour problems. Highest parenting stress caused by child characteristics was reported by the group of mild overestimation, followed by the group of moderate overestimation and by the group of severe overestimation, showing the lowest level of parenting stress due to child characteristics. Details are shown in Table 2. Highest parenting stress caused by parent characteristics was reported by the group of severe overestimation, followed by the group of mild overestimation and by the group of moderate overestimation, showing the lowest level of parenting stress due to parent characteristics. Details are shown in Table 2.

Total behaviour problems significantly influenced the child domain ($F(1,90) = 22.0$; $p \leq 0.000$) and the parent domain ($F(1,90) = 9.3$; $p = 0.003$), whereas additionally the total IQ revealed only a significant influence on the child domain ($F(1,90) = 4.9$; $p = 0.029$) and no significant association with the parent domain ($F(1,90) = 0.9$; $p = 0.327$). No significant influences were found by the covariates age and gender of the child on the child domain (age: $F(1,90) = 0.8$; $p = 0.370$; gender: $F(1,90) = 0.2$; $p = 0.685$) and on the parent domain (age: $F(1,90) = 0.0$; $p = 0.999$; gender: $F(1,90) = 1.0$; $p = 0.329$).

Table 1:

Mothers' estimates of the child's functioning and the child's actual functioning, regarding vocabulary

Variables	mothers' estimates mean (standard deviation)	actual functioning of the child mean (standard deviation)
vocabulary+	73.8 (9.5)	45.3 (15.9)*

* $p < 0.05$

+ higher scores representing higher performance

Table 2:
Parenting stress caused by child and parent characteristics regarding maternal estimates of vocabulary (mild/moderate/severe overestimation)

Variables	overestimation		
	mild	moderate	severe
	mean (standard deviation)	mean (standard deviation)	mean (standard deviation)
child characteristics+	97.4 (16.8)	93.7 (17.4)	89.2 (18.8)*
parent characteristics+	105.6 (19.6)	103.5 (18.3)	112.3 (17.7)*

* $p < 0.05$

+ higher scores representing higher parenting stress

Discussion

Studies about maternal estimates considering child development reported contradictory results. While some studies indicate that maternal estimates of their child's developmental age is a useful method for identifying developmental delay in young children (Pulsifer et al., 1994; Glascoe & Dworkin, 1995), other studies show a tendency towards maternal overestimation of their children, suggesting that the overall age of maternal estimates did not provide specific information about the child's functioning in different developmental domains and that they should not be used as an alternate to developmental assessment (Malihi et al., 2005). The practise of using maternal estimates as the only source of information concerning the development of a child – at least for the diagnostic of children's developmental status considering vocabulary and gross-motor skills in children with language disorders – has also been discouraged (Willinger & Eisenwort, 2005). All of the studies used clinically referred samples of children. However, in the present study mothers of non-clinical-referred children were more likely to overestimate their children's functioning as well. All of the mothers overestimated their children's vocabulary. Group comparisons between actual and estimated language skills showed significant differences in the active vocabulary with an overestimation of their children's language abilities. Our results are in line with the study by Willinger and Eisenwort (2005), using the same methods and material but in a clinical sample of preschool children.

Nevertheless, maternal overestimates should be used very carefully for detecting children with development delay but they might have a special relevance for or impact on the experience of parenting stress.

In the presented study, group comparisons between groups of different levels of maternal overestimations (mild, moderate and severe overestimation) of their child's language development with respect to parenting stress levels considering age, sex, intellectual development and child behaviour problems showed significant differences between the three groups and different significant influences of the covariates on the parenting stress.

The results showed that the total behaviour problems significantly influenced the child domain and the parent domain with respect to language development. In contrast the total IQ revealed only a significant influence on the child domain and no significant association with the parent domain. No significant influences were found for the covariates age and gender of the child on the child domain and on the parent domain.

The results are in line with many others studies, indicating on the one hand that child behaviour problems and intellectual developmental delay have been shown to explain a significant amount of the variability in parenting stress when compared to typically developing children. On the other hand behaviour problems are a more salient predictor of parenting stress than child intellectual ability (Einfeld & Tonge, 1996; Baker et al., 2002; 2003; Stores et al., 1998; Hauser-Cram et al., 2001; Herring et al., 2006).

The present study, analyzing the experiences of parenting stress, without the influence of intellectual development and child behaviour problems, showed the lowest level of parenting stress due to child characteristics in the group of severe overestimation. Regarding the parenting stress index (Abidin, 1995), high scores in the child domain may be associated with child characteristics which display qualities that make it difficult for parents to fulfill their parenting roles (Abidin, 1976; 1995). According to Abidin (1976; 1995) the child domain score is often elevated for parents of disabled children, including mentally retarded, hyperactive, emotionally disturbed, and learning disabled children, as well as children with cerebral palsy. The most extreme elevations are found in hyperactive children and those children with behavioural disorders.

Severe overestimation of the actual child's language development, especially active vocabulary, defined as 36 and more words difference between actual and estimated active vocabulary, could simply mean that these children might have a language developmental delay or have a specific language impairment, especially an expressive language disorder. Studies about parenting stress of mothers with expressive and receptive language impaired children showed significantly higher parenting stress considering child and parent characteristics (Schaunig et al., 2004) as well as higher parenting stress only in the child domain in children with expressive language impairment (Caulfield et al., 1989).

Our results showed that mothers seem to refer their experienced parenting stress to their estimated and assumed language developmental level of their children and do not relate the parenting stress to the actual language development. They seem to experience their children as the (maybe even more than) "perfect child" regarding active vocabulary. One possible explanation may be that maternal estimates of their child's development, is seen as an examination of their own personal parenting performance in a sense of extended identity. The concept of the extended identity was introduced by Semin and Papadopoulou (1989) in the context of an analysis of the process by which children's social emotions are socialized. When viewed from a Vygotskian perspective (1981), the mother seems to enter the child/mother dyad in a twofold manner: once as herself and once as a component of the mother/child dyad, so creating an "extended identity". She acts for and on behalf of her child. Therefore mother and child represent a unit (Semin & Papadopoulou, 1989).

Another explanation may be that having a developmentally delayed child might cause a lot of anxiety. Maternal estimates may represent defense mechanisms (Freud, 1894) or a reduction of a cognitive dissonance (Festinger, 1957). Defense mechanisms as possibilities to protect one's personality from unpleasant thoughts and realities which may otherwise cause overwhelming stress such as anxiety and which are applied to deal with conflicts (Freud, 1894). Specific defense mechanisms which may be applied to deal with the conflict of perhaps having a child who has developmental impairment, are denial (dealing with emotional stressors by failing to recognize obvious implications or consequences of a thought, act, or situation), suppression (dealing with stressors by deferred dealing with the stressor), introjection (dealing with stressors by internalizing the values or characteristics of another person, who is usually significant to the individual in some way, e.g. to a "highly gifted child"), projection (attributing one's own emotions or desires (being an intelligent person) to an external object or person (to the own child)), idealization (dealing with stressors by overestimating the desirable qualities (e.g. developmental skills) and underestimating the limitations of a desired object). Cognitive dissonance is a state of opposition between cognitions which are defined as being an attitude, belief, emotion, value, or even a mixture of these. According to Festinger (1957) the theory of cognitive dissonance claims that contradicting cognitions serve as a driving force that require the individual to acquire or invent new thoughts or beliefs, or to modify existing beliefs, so as to minimize the amount of conflict or dissonance between the cognitions. Festinger (1957) proposed that cognitive dissonance is a "negative drive state" and that people will seek to resolve this tension, also by a distortion of the truth. In the present study, cognitive dissonance may be caused by the difference between the suspense of having a developmentally delayed child and the desire of having a healthy and normal child.

In the present study, the highest parental stress with respect to parent characteristics was reported by the group of severe overestimation, followed by the group of mild overestimation, while the group of moderate overestimation showed the lowest level of parenting stress due to parent characteristics. High scores in the *parent domain* suggest that the sources of stress and potential dysfunction of the parent-child system may be related to dimensions of the parent's functioning (Abidin, 1976; 1995). According to Abidin (1976; 1995), parents who show high *parent-domain* scores feel overwhelmed and inadequate to the task of parenting. High parenting stress and severe overestimation may be caused by the difference between estimated child development that does not hold true for the reality, leading to an increasing frustration and low self-efficacy as a parent. Coleman and Karraker (1998) investigated the construct of parenting self-efficacy, which comprises parents' perceptions of their ability to perform the tasks associated with parenting. They described associations between self-efficacy with respect to parenting and child behaviour problems. According to Day et al. (1994) parents with lower levels of parenting self-efficacy reported higher rates of child behaviour problems in a sample of clinically referred children with conduct problems. Coleman and Karraker (2003) showed that an average of 12 % of the variance in child behaviour was explained by parenting self-efficacy in a study of mothers and toddlers. Children of mothers who reported greater parenting self-efficacy exhibited greater compliance and affection towards the mother as

well as less negativity (Coleman & Karraker, 2003). One possible mechanism through which parenting self-efficacy impacts child behaviour is through specific parenting behaviours. Higher levels of parenting self-efficacy were related to greater maternal warmth, sensitivity (Teti & Gelfand, 1991) and responsiveness (Stifter & Bono, 1998). Mothers with high parenting self-efficacy also displayed more active stress coping (Wells-Parker et al., 1990).

In conclusion, in a sample of non-clinic-referred children between three and six years of age, maternal estimates showed a significant overestimation of mothers with respect to their children's active vocabulary. The meaning of this overestimation seems to cause a better feeling in the mothers, with a lower level of parenting stress regarding child characteristics. This lower level of parenting stress regarding child characteristics, caused by severe overestimations may be explained by a defense mechanism, cognitive dissonance or by mothers being the extended identity of their children. Furthermore, mothers reported the highest level of parenting stress regarding parent characteristics with respect to mild overestimations, which may be explained by the feeling of reduced self-efficacy. In general, the results showed that mothers should not be used as only source of information about their children's developmental status, especially with respect to their active vocabulary. However, maternal overestimations seem to have a positive impact on parenting stress.

References

- Abidin, R. R. (1976). *A model of parenting stress*. Unpublished Manuscript, University of Virginia, Charlottesville.
- Abidin, R. R. (1995). *Parenting Stress Index* (3rd Ed). Odessa: Psychological Assessment Resources.
- Achenbach, T. M. (1991). *Manual for the Child Behaviour Checklist/4-18 and 1991 Profiles*. Burlington: University of Vermont Department of Psychiatry.
- Baker, B. L., & Blacher, J. (2002). For better or worse? Impact of residential placement on families. *Mental Retardation*, 44, 1-13.
- Baker, B. L., & Heller, T. L. (1996). Preschool children with externalizing behaviours: experience of fathers and mothers. *Journal of Abnormal Child Psychology*, 24, 513-32.
- Baker, B. L., Blacher, J., Crnic, K. A., & Edelbrock, C. (2002). Behaviour problems and parenting stress in families of three year old children with and without developmental delays. *American Journal on Mental Retardation*, 107, 433-444.
- Baker, B. L., Blacher, J., Kopp, C. B., & Kraemer, B. (1997). Parenting children with mental retardation. *International Review of Research in Mental Retardation*, 20, 1-45.
- Baker, B. L., McIntyre, L. L., Blacher, J., Crnic, K., Edelbrock, C., & Low, C. (2003). Preschool children with and without developmental delay: behaviour problems and parenting stress over time. *Journal of Intellectual Disability Research*, 47, 217-230.

- Caufield, M. B., Fischel, J. E., DeBaryshe, B. D., & Whitehurst, G. J. (1989). Behavioral correlates of developmental expressive language disorder. *Journal of Abnormal Child Psychology*, 2, 187-201.
- Coleman, P. K., & Karraker, K. H. (1998). Self-efficacy and parenting quality: findings and future applications. *Developmental Review*, 18, 47-86.
- Day, D. M., Factor, D. C., & Szkiba-Day, P. J. (1994). Relations among discipline style, child behavior problems, and perceived ineffectiveness as a caregiver among parents with conduct problem children. *Canadian Journal of Behavioural Science*, 26, 502-533.
- Deater-Deckard, K. (1998). Parenting stress and child adjustment: some old hypotheses and new questions. *Clinical Psychology: Science and Practice*, 5, 314-332.
- Döpfner, M., Schmeck, K., & Berner, W. (1994). *Handbuch: Elternfragebogen über das Verhalten von Kindern und Jugendlichen. Forschungsergebnisse zur deutschen Fassung der Child Behaviour Checklist (CBCL)* [Manual of a parental questionnaire concerning children's and adolescence's behaviour. Research results of the German version of the Child Behaviour Checklist (CBCL)]. Köln: Arbeitsgruppe Kinder-, Jugend- und Familiendiagnostik.
- Dunn, L. M., & Dunn, L. M. (1997). *Peabody Picture Vocabulary Test - 3rd Edition- PPVT-III*. Minnesota: American Guidance Service.
- Einfeld, S. L., & Tonge, J. (1996). Population prevalence of psychopathology in children and adolescents with intellectual disability: II. Epidemiological findings. *Journal of Intellectual Disability Research*, 40, 99-109.
- Eisenhower, A. S., Baker, B. L., & Blacher, J. (2009). Children's delayed development and behavior problems: Impact on mothers' perceived physical health across early childhood. *Social Science & Medicine*, 68, 89-99.
- Eisenhower, A., & Blacher, J. (2006). Mothers of adults with intellectual disability: multiple roles, ethnicity and well-being. *Journal of Intellectual Disability Research*, 50, 905-916.
- Emerson, E. (2003). Prevalence of psychiatric disorders in children and adolescents with and without intellectual disability. *Journal of Intellectual Disability Research*, 47, 51-58.
- Festinger, L. (1954). A theory of social comparison processes. *Human Relations*, 7, 117-140.
- Fidler, D. J., Hodapp, R. M., & Dykens, E. M. (2000). Stress in families of young children with Down Syndrome, Williams syndrome, and Smith-Magenis syndrome. *Early Education and Development*, 11, 395-406.
- Freud, S. (1894). *Die Abwehr-Neuropsychosen. Gesammelte Werke* [Defense mechanism. Collected Works]. Frankfurt: Fischer.
- Glascoe, F. P., & Dworkin, P. H. (1995). The role of parents in the detection of developmental and behavioural problems. *Pediatrics*, 95, 829-836.
- Glascoe, F. P. (1994). It's not what it seems: The relationship between parent's concerns and children with global delays. *Clin Pediatr*, 33, 292-296.
- Glidden, L. M., & Schoolcraft, S. A. (2003). Depression: its trajectory and correlates in mothers rearing children with intellectual disability. *Journal of Intellectual Disability Research. Special Issue on Family Research*, 47, 250-63.

- Grimm, H. (2001). SETK 3-5: *Sprachentwicklungstest für drei- bis fünfjährige Kinder; Diagnose von Sprachverarbeitungsfähigkeiten und auditiven Gedächtnisleistungen* [Evaluation of Language Development regarding 3-5 years old children]. Göttingen: Hogrefe.
- Hastings, R. P., Daley, D., Burns, C., & Beck, A. (2006). Maternal distress and expressed emotion: cross-sectional and longitudinal relationships with behaviour problems of children with intellectual disabilities. *American Journal on Mental Retardation, 111*, 48-61.
- Hauser-Cram, P., Warfield, M. E., Shonkoff, J. P., & Krauss, M. W. (2001). Children with disabilities: a longitudinal study of child development and parent well-being. *Monographs of the Society for Research in Child Development, 66*, 1-131.
- Herring, S., Gray, K., Taffe, J., Tonge, B., Sweeney, D., & Einfeld, S. (2006). Behaviour and emotional problems in toddlers with pervasive developmental disorders and developmental delay: associations with parental mental health and family functioning. *Journal of Intellectual Disability Research, 50*, 874-82.
- Kersh, J., Hedvat, T. T., Hauser-Cram, P., & Warfield, M. E. (2006). The contribution of marital quality to the well-being of parents of children with developmental disabilities. *Journal of Intellectual Disability Research, 50*, 883-93.
- Kiese, C., & Kozielski, P. M. (1996). *Aktiver Wortschatztest für 3-6jährige Kinder* [Active Vocabulary Test regarding 3-6 years old children]. Göttingen: Beltz Test.
- Malihi, P., Kashyap, S., & Dua, S. (2005). Maternal Estimates of mental age in developmental assessment. *Indian Journal of Padiatrics, 71*, 931-934.
- Oelofsen, N., & Richardson, P. (2006). Sense of coherence and parenting stress in mothers and fathers of preschool children with developmental disability. *Journal of Intellectual & Developmental Disability, 31*, 1-12.
- Olsson, M. B., & Hwang, C. P. (2001). Depression in mothers and fathers of children with intellectual disability. *Journal of Intellectual Disability Research, 45*, 535-543.
- Pearson, D. A., Lachar, D., Loveland, K. A., Santos, C. W., Faria, L. P., & Azzam, P. N., (2000). Patterns of behavioural adjustment and maladjustment in mental retardation: comparison of children with and without ADHD. *American Journal on Mental Retardation, 105*, 236-251.
- Pulsifer, M. B., Hoon, A. H., Palmer, F. B., Gopalan, R., & Capute, A. J. (1994). Maternal estimates of developmental age in preschool children. *J Pediatr, 125*, 18-24.
- Schaunig, I., Willinger, U., Diendorfer-Radner, G., Hager, V., Jörgl, G., Sirsch, U., & Sams, J. (2004). Parenting Stress Index: Einsatz bei Müttern sprachentwicklungsgestörter Kinder [Parenting Stress Index regarding mothers with language-impaired children]. *Praxis der Kinderpsychologie und Kinderpsychiatrie, 53*, 395-405.
- Semin, G., & Papadopoulou, K. (1989). The acquisition of reflexive social emotions: The transmission and reproduction of social control through joint action. In G. Duveen & B. Lloyd (Eds.), *Social Representation and the Development of Knowledge* (pp.107-126). Cambridge: CUP.
- Shaw, D. S., Lacourse, E., & Nagin, D. S. (2005). Developmental trajectories of conduct problems and hyperactivity from ages 2 to 10. *Journal of Child Psychology and Psychiatry, 46*, 931-942.

- Stifter, C. A., & Bono, M. A. (1998). The effect of infant colic on maternal self-perceptions and mother-infant attachment. *Child: Care, Health and Development, 24*, 339-351.
- Stores, R., Stores, G., Fellows, B., & Buckley, S. (1998). Daytime behaviour problems and maternal stress in children with Down's syndrome, their siblings, and non-intellectually disabled and other intellectually disabled peers. *Journal of Intellectual Disability Research, 42*, 228-37.
- Suárez, L. M., & Baker, B. L. (1997). Child externalizing behavior and parents' stress: the role of social support. *Family Relations. Special Issue: Family Caregiving for Persons with Disabilities, 46*, 373-81.
- Teti, D. M., & Gelfand, D. M. (1991). Behavioral competence among mothers of infants in the first year: the meditational role of maternal self-efficacy. *Child Development, 62*, 918-929.
- Turnbull, A. P., Patterson, J. M., Behr, S. K., Murphy, D. L., Marquis, J. G., & Blue-Banning, M. J. (1993). *Cognitive Coping, Families, and Disability*. Baltimore: Paul H. Brookes Publishing.
- Vygotsky, L. S. (1981). The development of higher forms of attention in childhood. In J. V. Wertsch (Ed.), *The concept of activity in Soviet psychology* (pp. 67-115). Armonk, N.Y.: Sharpe.
- Wells-Parker, E., Miller, D. I., & Topping, S. (1990). Development of control of outcome scales and self-efficacy scales for women in four life roles. *Journal of Personality Assessment, 54*, 564-575.
- Willinger, U., Diendorfer-Radner, G., Willnauer, R., Jörgl, G., & Hager, V. (2005). Parenting stress and paternal bonding. *Behavioral Medicine, 31*, 63-69.
- Willinger, U., & Eisenwort, B. (2005). Mothers' Estimates of their children with disorders of language development. *Behavioral Medicine, 31*, 117-124.