

Chapter 2

Parenting stress and child behaviour problems among parents with intellectual disabilities: The buffering role of resources

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Journal of Intellectual Disability Research, accepted for publication

Abstract

Background Parents with intellectual disabilities (ID) are at risk for high levels of parenting stress. The present study evaluated resources, including parental adaptive functioning, financial resources, and access to a support network, as moderators of the association between child behaviour problems and parenting stress.

Method A total of 134 parents with ID and their children (ages 1-7 years) were recruited from 10 Dutch care organizations. Questionnaires were administered to the parents to obtain information on parenting stress in the parent and child domain, financial resources, and their support network. Teachers and care workers reported on child behaviour problems and parental adaptive functioning, respectively.

Results Parents experienced more stress with regard to their children than toward their own functioning and situation. Parenting stress was less in parents who were not experiencing financial hardship. Child behaviour problems were associated with high child-related parenting stress, not parent-related parenting stress. Large support networks decreased the association between child behaviour problems and child-related parenting stress. Financial resources did not significantly moderate the association.

Conclusions Parenting stress among parents with ID is focused on problems with the child, especially when little social support is available.

Introduction

Parents with intellectual capabilities ranging from borderline intellectual functioning to intellectual disabilities (hereafter referred to collectively as ID) have been found to be at risk for high parenting stress (Aunos et al., 2008; Feldman et al., 1997, 2002). In the general population, parenting stress is associated with authoritarian and negative parenting styles, less stimulation for children, and a higher risk of insecure attachment, neglect, and abuse (Deater-Deckard, 1998). The few studies that have focused on parents with ID also found that parenting stress is associated with less sensitive and less responsive parenting and with child behaviour problems (Aunos et al., 2008; Feldman et al., 2002). Parenting stress includes negative expectations and perceptions by parents of their capabilities and the family situation (stress in the parent domain), as well as perceptions of the child as a challenge to their capabilities and resources (stress in the child domain). Though studies among parents without ID find that risk and resilience factors are generally associated with stress in both domains, studies among parents with ID have explored this differentiation to a limited extent (Feldman et al., 2002). Furthermore, buffering mechanisms, such as sufficient financial means and social network size, may play different roles among parents with ID (Aunos & Feldman, 2002; Booth et al., 2006) but have not been studied. Therefore, the current study was performed to unpack the types of parenting stress that parents with ID experience in relation to child behaviour problems, and to investigate the extent to which resources mitigate the experience of parenting stress despite difficulties with their children.

Parents with ID tend to be disadvantaged with regard to resources that are important when starting a family. People with ID experience higher levels of poverty and financial hardship (Booth & Booth, 1999; Braveman et al., 2010; Parish et al., 2009), which may be experienced as a failure to provide for the family. In parents who utilize universal family support services, financial hardship is positively associated with parenting stress (McConnell et al., 2011), but whether these effects can be generalized to parents with ID is unclear. Parents with ID also tend to lack social support with regard to both the number of people they can count on and their satisfaction with the support that is provided (Llewellyn & McConnell, 2002). Feldman et al. (2002) found an association between overall social support and satisfaction with support and levels of parenting stress. However, for parents with ID, whether financial means or social networks buffer against parenting stress when children exhibit behaviour problems is unknown.

The idea of resources as a buffer against the effect of stressors has been hypothesized in social support literature (Armstrong et al., 2005; Cohen & Wills, 1985; Mc-

Connell et al., 2011). In these studies, the adverse effects of a stressor on well-being were hypothesized to be smaller in the presence of a supportive network. Armstrong et al. (2005) reviewed the literature and concluded that social support provides a protective buffer for families of a child with serious emotional problems. Given the ambivalent attitudes of members in the social networks of people with ID who are starting a family (Aunos & Feldman, 2002), the buffering role of social support is not self-evident. Financial resources may also buffer against the impact of child behaviour as a stressor. In a sample of families raising children with disabilities and behaviour problems (McConnell et al., 2014), no significant association was found between child behaviour problems and family life congruence under conditions with little financial hardship. Though previous studies of parents with ID have provided evidence of linkages between social support, financial resources, and parent and child functioning, the modest sample sizes of these pioneering studies have not allowed more differentiated models of parenting stress to be tested in relation to combinations of risk and resilience factors.

The objective of the current study was to investigate within-group variation in parenting stress experienced by parents with ID associated with child behaviour problems as a stressor in a multifactorial design. Financial resources to meet basic needs, access to support, and parental adaptive functioning were included as resources that may mitigate the experience of parenting stress in the context of child behaviour problems. Before testing hypotheses regarding risk and resilience, the parent and child domains of parenting stress were contrasted with regard to their mean values as well as their linkages with child behaviour problems in order to investigate the need for differentiating these domains for parents with ID. The first hypothesis to be tested was: parenting stress is heightened when children have more behaviour problems, and decreased when parents have more resources (adaptive functioning, financial resources, and access to social support). The second hypothesis was: the strength of the association between parenting stress and child behaviour problems is mitigated when parents have more resources, expanding findings for social support into other parent populations (Armstrong et al., 2005; Cohen & Wills, 1985).

Methods

Sample

Parents with ID who were the primary caregivers of a child between 1.0 and 7.0 years of age were recruited from 10 care organizations for people with disabilities across the Netherlands. Only one parent per family, the parent who took care of the

child most of the time, was invited for this study. If parents had more than one child within the eligible age range, the youngest child was chosen for participation. The decision to favour the youngest child was based on a later part of our project to test the effectiveness of a parent-focused intervention. This intervention study included children up to 7 years old, but young children were hypothesized to profit more. Eligible children lived at the parents' home at least 4 days a week. In the Netherlands, parents are referred to care organizations for people with disabilities when they exhibit significant limitations in one or more domains of adaptive functioning. Shortcomings in social skills, communication, or daily living skills may be identified as risks to the functioning of the family and the position of the children therein, leading to referral for support from care organizations that specialize in supporting people with disabilities. Therefore, the population of parents with ID served by organizations for people with disabilities includes parents with mild intellectual disabilities and parents with borderline intellectual functioning (IQ <85) accompanied by limitations in their adaptive functioning.

Support staff asked potential participants whether they agreed to be contacted by the researchers and provided the participants with written information. A total of 200 clients agreed to an informed consent visit, of which 156 parents (78%) agreed to participate in this study. Of the other 44 parents, 25 declined the invitation and 19 could not be reached. Data were incomplete for 10 parents and 8 children. Four parents previously identified by their care organization as eligible had IQ scores > 85 and were excluded from analyses. Descriptive statistics for the age, IQ, gender, and ethnicity of the final set of 134 parents and children are presented in Table 1.

Table 1. Demographics of parents with ID and their children

| | Parents ^a | | | Children ^a | | |
|-----------------|----------------------|------------------------|-------------|-----------------------|------------------------|-----------|
| | <i>n</i> (%) | <i>M</i> (<i>SD</i>) | Range | <i>n</i> (%) | <i>M</i> (<i>SD</i>) | Range |
| Age, year;month | | 30;6 (6;8) | 18;9 - 46;9 | | 3;1 (1;6) | 1;0 - 7;0 |
| IQ ^b | | 71 (8) | 49 - 85 | | | |
| Female | 129 (96) | | | 66 (49) | | |
| Ethnicity | | | | | | |
| Dutch | 97 (71) | | | | | |
| Other | 34 (27) | | | | | |
| Unknown | 3 (2) | | | | | |

^a N=134

^b IQ scores were derived from the care organizations

Instruments

Parenting stress

Parenting stress was measured using the Dutch version of the 25-item Parenting Stress Index – Short Form (PSI-SF; Abidin, 1983; De Brock et al., 1992). Participants responded on a 6-point scale (1=strongly disagree to 6=strongly agree). The parent domain scale consisted of 11 items (e.g., “I am not able to care for my child as well as I thought I would be able to”) and the child domain scale consisted of 14 items (e.g., “My child has more difficulties than I expected”). Both the short and the long forms of the PSI have been used successfully in studies involving parents with ID (Aunos et al., 2008; Feldman et al., 1997, 2002). In this study, the Cronbach’s alpha coefficients for internal consistency were 0.92 for the total stress scale, 0.86 for the parent domain, and 0.89 for the child domain. High scores indicated more stress. Norm scores from a Dutch non-clinical sample were used to interpret the raw PSI-SF scores (De Brock et al., 1992).

Child behaviour problems

The Dutch version (Verhulst & Van der Ende, 1997) of the Caregiver–Teacher Report Form 1½–5 (C-TRF) and Teacher Report Form 6-18 (TRF) were used. The C-TRF and TRF consist of 100 and 113 items, respectively, which are rated on a 3-point scale (0 = not true to 2 = very true or often true) measuring internalizing and externalizing problem behaviours. For this study, the overall mean item score (total problems) was used as an indicator of child behaviour problems, with higher scores indicating more behaviour problems. In addition, to compare the children in the current study to Dutch norm data, the children were assigned a T-score for total problems based on Dutch norm data (Verhulst & Van der Ende, 1997). A T-score < 60 was in the normal range (< 93rd percentile), a T-score of 60, 61, or 62 was in the subclinical range (93rd to 97th percentile), and a T-score ≥ 63 was in the clinical range (> 97th percentile). The C-TRF and TRF have been shown to be reliable and valid (De Groot et al., 1994), and Cronbach’s alpha in this study was 0.95.

Adaptive functioning

The parental level of adaptive functioning was assessed with the Dutch version of the Vineland Adaptive Behavior Scales (VABS; Sparrow et al., 1984; Van Berckelaer-Onnes et al., 1995). The VABS were chosen on the basis of validity (Sparrow et al., 1984). The VABS were administered to primary support workers for parents to cover three areas of functioning: communication, daily living skills, and socialization. Communication refers to receptive, expressive, and written language skills (133 items); daily living

skills measures the skills needed to take care of oneself and contribute to a household and community (201 items); and socialization refers to the skills needed to get along with others and to regulate emotions and behaviour (134 items). Raw domain scores were converted into developmental age scores. Furthermore, an Adaptive Behaviour Composite score (ABC-3; Van Duijn et al., 2009) was computed based on raw scale scores for communication, daily living skills, and socialization. The Cronbach's alpha for ABC-3 within this study was 0.96.

Financial resources

As an indication of financial resources to meet basic needs, parents were asked whether they experienced hardship in regards to basic standards of living. These standards were based on Parish et al., (2009) and a national survey of basic standards for living in the Netherlands (Otten et al., 2008). Meeting the basic standards of living was assessed in a yes or no format for seven domains: food security (4 items), housing stability (3 items), information (phone and internet; 2 items), health insurance, clothing, transportation, and solvency (1 item each). Responses were recoded such that higher scores reflected more financial resources to meet basic standards of living. The Cronbach's alpha for the measure was 0.71.

Support network size

A measure of access to support figures was obtained using the Support Interview Guide (SIG; Llewellyn & McConnell, 1999; Llewellyn & McConnell, 2002). Parents were asked to identify persons "who help/support you, and people who you can turn to for help when you need it". The names of support persons were written in the relevant sections of a social network map. Support network size was computed by summing the number of people who were identified as members of the parent's support network. The SIG was designed for and previously used in research involving parents with ID and has been shown to be sensitive to differences between parents in network size and composition (Llewellyn & McConnell, 2002).

Procedure

The PSI-SF, SIG, and financial resources questionnaire were administered in the parents' home during a 2-hour home visit. The PSI-SF was adjusted for participants by using larger fonts and character spacing, and by repeating the rating scale numbers and text after every item. The introduction texts were simplified and, for each item, standardized explanations added. Researchers read every statement out loud, after which the parents could fill in the answer. If parents had difficulty finding the answer

that best fit their perception, they could ask the researcher for support. All respondents received a voucher for EUR 25.

Kindergarten or elementary school teachers filled out the (C-)TRF. If children did not visit kindergarten or school, the parents' support worker filled out the (C-)TRF. All support workers visited the parents in their home and indicated that they spent enough time with the children to fill out the (C-)TRF. The questionnaire was mailed with a cover letter, copy of consent form signed by the parent, and a return postage-paid envelope. The mean time between completion of the PSI-SF and the (C-)TRF was 2 months. An educational psychologist appointed at the care organization that supported the parent, or one of the researchers, conducted the VABS with the parent's primary professional caregiver.

Ethical approval was obtained from the Medical Ethical Committee of VU University Medical Center, Amsterdam (ref. no. NL31934.029.10).

Data analysis

The data were analyzed using IBM SPSS statistics version 20. All variables were checked for outliers ($Z \geq 3.29$ or ≤ -3.29), which were winsorized to the nearest non-outlier (Tabachnick & Fidell, 2007). This happened in two cases. The first hypothesis of this study on the main effects of child behaviour problems and resources on parenting stress was tested using hierarchical linear regression. Parenting stress scores were included as the dependent variable; child behaviour problems (step 1) and parental adaptive functioning, financial resources, and support network size (step 2) were included as independent variables. Separate analyses were conducted for parenting stress in the child domain and parenting stress in the parent domain.

The second hypothesis of this study pertaining to the buffering role of adaptive functioning, financial resources, and support network size was tested using linear regression analyses following the procedure described by Aiken and West (1991) for establishing moderation. Parenting stress (child- and parent-related) was included as the dependent variable. Child behaviour problems and the moderating variables were centred and the interaction term child behaviour problems x moderator computed. In the first step of the regression analysis, child behaviour problems were added. In the second step, moderator and interaction terms were added. Separate analyses were conducted for the three moderators. To describe the moderator effects, the 'pick-a-point' procedure (Rogosa, 1980) was used, as suggested by Farmer (2012).

Results

Preliminary analyses

Full descriptive statistics on parenting stress, child behaviour problems, and resources (adaptive functioning, financial resources, and support network size) are reported in Table 2. The parents in this study reported a mean parenting stress score around the 75th percentile compared to a non-clinical norm group (De Brock et al., 1992), which is classified as above average based on a normative sample of 161 mothers from the Netherlands. Thirty-seven percent of the parents experienced high or very high parenting stress (above the 85th percentile). A paired samples t-test revealed that the difference between parenting stress scores in the child and parent domains was significant ($t(133) = -4.03, P < 0.001$). Parents reported higher stress in the child domain than in the parent domain. Regarding the children's behaviour problems, the mean T-score of the sample for total problems was in the normal range, but 42% of the children (51% of the boys and 32% of the girls) scored in the clinical or subclinical range.

Table 2. Descriptive statistics for parenting stress (PSI-SF), child behaviour problems ((C-)TRF), adaptive functioning (VABS, ABC-3), financial resources, and support network size in parents with ID

| Scale | Mean | 95% CI | SD | Norm-score | |
|---|------|-------------|------|---------------------------------|-------------|
| Parenting stress (N=134) ^a | | | | Percentile | |
| Child domain | 2.85 | 2.66 - 3.04 | 1.10 | | |
| Parent domain | 2.56 | 2.38 - 2.74 | 1.05 | | |
| Total score | 2.72 | 2.55 - 2.89 | 1.00 | 75 | |
| | | | | T-score ^c | |
| | | | | Boys | Girls |
| Child behaviour problems (N=134) ^b | 0.35 | 0.31 - 0.38 | 0.22 | 58 | 55 |
| | | | | Developmental age (year; month) | |
| | | | | Mean | Range |
| Adaptive functioning (N=127) | 814 | 806 - 822 | 43 | | |
| Communication | | | | 8;8 | 6;0 - 16;6 |
| Daily functioning | | | | 14;10 | 8;7 - 18;11 |
| Socialization | | | | 7;10 | 4;1 - 16;6 |
| Financial resources ^d (N=131) | 0.82 | 0.77 - 0.85 | 0.18 | | |
| Support network size (N=133) | 9.4 | 8.7 - 10.2 | 4.4 | | |

^a Range 1-6; ^b Range 0-2; ^c T-scores: 0-59 = normal range, 60-63 = subclinical range, 64-100 = clinical range; ^d Range 0-1 PSI-SF, Parenting Stress Index - Short Form; (C-)TRF, (Caregiver) Teacher Report Form; VABS, Vineland Adaptive Behavior Scales; ABC-3, Adaptive Behaviour Composite score; CI, confidence interval

Table 3. Pearson's correlation coefficients for parenting stress, child behaviour problems, parental adaptive functioning, financial resources, and support network size

| | Parenting stress | | | Child behaviour problems | Parental adaptive functioning | Financial resources | Support network size |
|--------------------------------------|------------------|---------|---------|--------------------------|-------------------------------|---------------------|----------------------|
| | Child | Parent | Total | | | | |
| Parenting stress (PSI-SF) | | | | | | | |
| Child domain | - | | | | | | |
| Parent domain | 0.70*** | - | | | | | |
| Total stress | 0.94*** | 0.90*** | - | | | | |
| Child behaviour problems ((C-)TRF) | 0.26** | 0.06 | 0.19* | - | | | |
| Parental adaptive functioning (VABS) | -0.04 | -0.04 | -0.04 | -0.10 | - | | |
| Financial resources | -0.26** | -0.21* | -0.26** | -0.11 | 0.05 | - | |
| Support network size | -0.06 | 0.00 | -0.03 | -0.06 | 0.10 | -0.13 | - |

N ranges from 123 to 134 due to missing data

PSI-SF, Parenting Stress Index - Short Form; (C-)TRF, (Caregiver) Teacher Report Form; VABS, Vineland Adaptive Behavior Scales

* $P < 0.05$, ** $P < 0.01$, *** $P < 0.001$

Table 3 shows zero-order correlations between the dependent, independent, and resource variables. These bivariate correlation results show that parenting stress in the child domain was positively associated with child behaviour problems. Parenting stress in the parent domain was not significantly associated with child behaviour problems. The Hotelling-Williams test (Steiger, 1980) was used to test whether parenting stress in the child domain is more strongly associated with child behaviour than parenting stress in the parent domain. The difference between the coefficients was significant ($t(133) = 3.11, P < 0.01$). Because of the differences between the child and parent domains of parenting stress, both between each other and in correlation with predictor variables, hypotheses were tested for both domains separately.

Main effects of resources on parenting stress (hypothesis 1)

Table 4 presents the findings from a two-step hierarchical regression analysis predicting parenting stress in the child and parent domains from child behaviour problems, parental adaptive functioning, financial resources, and support network size. In step 1 of the regression analysis, child behaviour problems significantly predicted parenting stress in the child domain ($\beta = 0.22, P = 0.02$), as shown in the correlation results. With the introduction of resource variables into the model, the change in R^2 was significant ($F(3, 118) = 3.06, P = 0.03$). Of the resource variables, only financial resources was a

Table 4. Hierarchical regression analyses of explained variance in parenting stress (PSI-SF) for child behaviour problems and parental adaptive functioning, financial resources, and support network size (N=123)

| | Parenting stress child domain | | Parenting stress parent domain | |
|---|----------------------------------|----------|-----------------------------------|----------|
| | β | <i>t</i> | β | <i>t</i> |
| 1 Child behaviour problems ((C-)TRF) | 0.22 | 2.42* | 0.05 | 0.51 |
| R ² ; F | 0.05 | 5.85* | 0.00 | 0.26 |
| 2 Child behaviour problems ((C-)TRF) | 0.18 | 2.06* | 0.02 | 0.23 |
| Parental adaptive functioning (VABS) | 0.03 | 0.30 | -0.01 | -0.08 |
| Financial resources | -0.26 | -2.99** | -0.21 | -2.27* |
| Support network size | -0.08 | -0.92 | -0.02 | -0.19 |
| R ² (Δ R ²); F | 0.12 (0.07) | 3.06* | 0.04 (0.04) | 1.74 |

PSI-SF, Parenting Stress Index - Short Form; (C-)TRF, (Caregiver) Teacher Report Form; VABS, Vineland Adaptive Behavior Scales

* $P < 0.05$, ** $P < 0.01$

significant predictor of reduced parenting stress in the child domain ($\beta = -0.26$, $P < 0.01$). When resource variables were included in the model, child behaviour problems still significantly predicted parenting stress in the child domain ($\beta = 0.18$, $P = 0.04$). Child behaviour problems did not predict parenting stress in the parent domain and, by adding the resource variables, the change in R² was not significant. For parenting stress in the parent domain, a main effect was observed for financial resources ($\beta = -0.21$, $P = 0.03$). No main effects on stress in the parent domain were found for the other resources.

Moderating effect of adaptive functioning, financial resources, and support network size (hypothesis 2)

The second hypothesis of a weakened association between parenting stress and child behaviour problems in the presence of parental resources was tested by adding product factors to the hierarchical regression models from hypothesis 1. No bivariate association was found between the moderators and the independent variable (Table 3), which is required for moderation to occur.

As Table 5 shows, parental adaptive functioning did not significantly moderate the association between child behaviour problems and parenting stress. However, a trend was observed in the child domain ($\beta = -0.16$, $P = 0.07$). For exploratory purposes, post-hoc analyses were conducted for low (-1 SD) and high (+1 SD) adaptive functioning. Parenting stress in the child domain was only positively associated with child behaviour problems for parents with lower adaptive functioning ($\beta = 0.38$, $P < 0.01$). A corresponding plot with separate regression lines for low and high adaptive function-

Table 5. Hierarchical regression analyses of the moderating effects of parental adaptive functioning, financial resources, and support network size on the association between child behaviour problems and parenting stress (PSI-SF)

| Moderator | Parenting stress child domain | | Parenting stress parent domain | |
|---|----------------------------------|--------------------|-----------------------------------|--------|
| | β | t | β | t |
| Parental adaptive functioning (N=127) | | | | |
| Child behaviour problems ((C-)TRF) | 0.22 | 2.57* | 0.06 | 0.64 |
| Parental adaptive functioning (VABS) | -0.02 | -0.17 | -0.03 | -0.36 |
| Interaction parental adaptive functioning x CBP | -0.16 | -1.82 [†] | -0.14 | -1.54 |
| R ² (Δ R ²) | 0.08 (0.03) | | 0.02 (0.02) | |
| Financial resources (N=131) | | | | |
| Child behaviour problems ((C-)TRF) | 0.24 | 2.86** | 0.05 | 0.52 |
| Financial resources | -0.21 | -2.49* | -0.18 | -2.02* |
| Interaction financial resources x CBP | 0.09 | 1.03 | 0.10 | 1.17 |
| R ² (Δ R ²) | 0.13 (0.06*) | | 0.06 (0.05*) | |
| Support network size (N=133) | | | | |
| Child behaviour problems ((C-)TRF) | 0.22 | 2.67** | 0.04 | 0.41 |
| Support network size | -0.05 | -0.58 | 0.00 | 0.02 |
| Interaction support network size x CBP | -0.21 | -2.49* | -0.12 | -1.38 |
| R ² (Δ R ²) | 0.10 (0.05*) | | 0.02 (0.02) | |

Data are presented as step 2 of the hierarchical regression, Δ R² is the explained variance relative to step 1 with child behaviour problems as the independent variable

[†] $P < 0.1$, * $P < 0.05$, ** $P < 0.01$

PSI-SF, Parenting Stress Index - Short Form; (C-)TRF, (Caregiver) Teacher Report Form; VABS, Vineland Adaptive Behavior Scales; CBP, child behaviour problems

ing (± 1 SD) is shown in Figure 1. The Δ R² for this model (step 2) compared to step 1 (child behaviour problems) was not significant. Although the moderator effect approached significance, adding adaptive functioning to the model did not significantly increase the explained variance.

Support network size was a significant moderator of the association between child behaviour problems and parenting stress in the child domain ($\beta = -0.21$, $P = 0.01$). Post-hoc analyses were conducted for small support network size (-1 SD) and large support network size ($+1$ SD). Parenting stress in the child domain was positively associated with child behaviour problems for parents with a smaller support network ($\beta = 0.47$, $P < 0.001$). Figure 2 shows a plot of the association between child behaviour problems and parenting stress with separate regression lines for low and high support network size. The Δ R² for this model (step 2) compared to step 1 (child behaviour

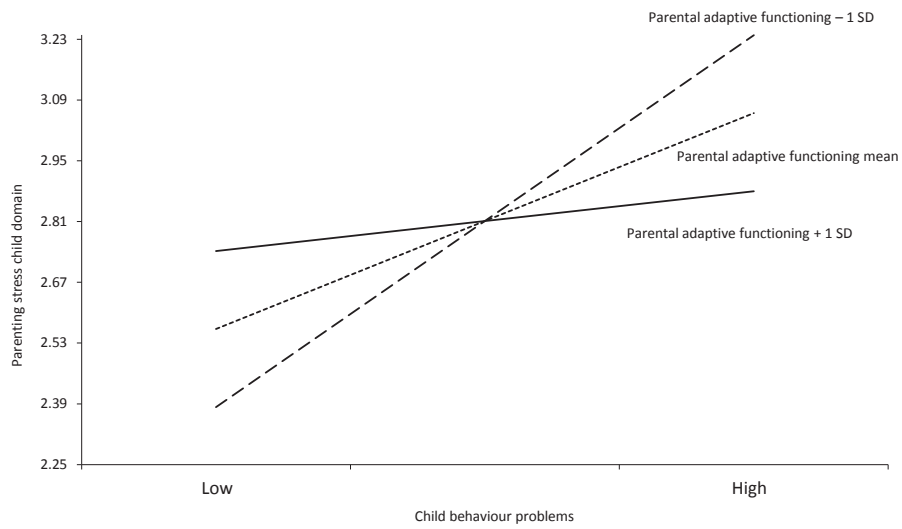


Figure 1. Parental adaptive functioning moderates the association between child behaviour problems and parenting stress in the child domain.

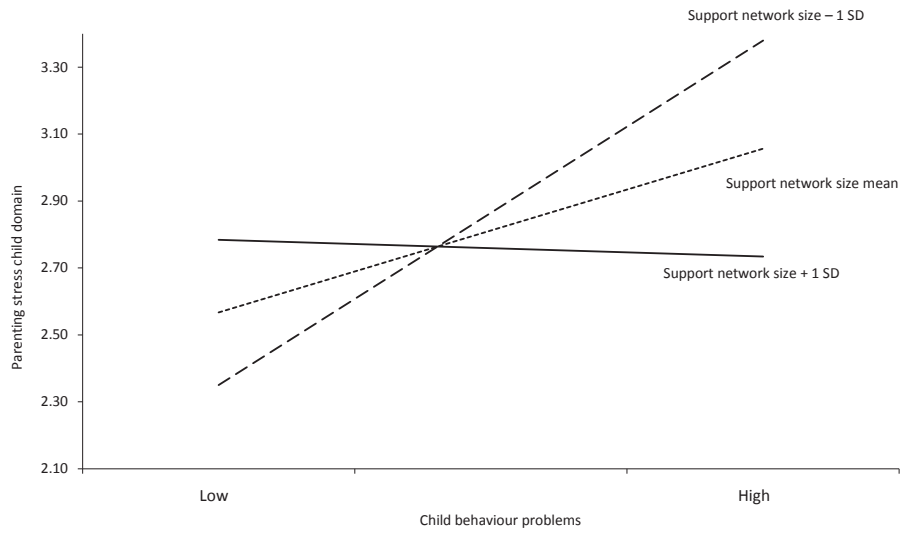


Figure 2. Support network size moderates the association between child behaviour problems and parenting stress in the child domain.

problems) was significant. Adding support network size to the model significantly improved the predictive value of the model.

Financial resources did not moderate the association between child behaviour problems and parenting stress, but a negative main effect of financial resources on parenting stress in the child ($\beta = -0.21$, $P = 0.01$) and parent domains ($\beta = -0.23$, $P = 0.045$) was observed.

Discussion

Parents with ID receiving support from care organizations reported high levels of stress in their parental role, especially when asked about the challenges presented by their children (child domain), but less so when asked about their own resources and skills (parent domain). This finding indicates a need to differentiate between the two domains of parenting stress. Consistent with this differentiation, parenting stress in the child domain was positively associated with teacher-reported child behaviour problems and negatively associated with parental resources, specifically financial resources. Parenting stress in the parent domain appeared independent of the stressors and resources studied, with the exception of the hypothesized main effect of financial resources.

Stressors and resources may not only hold each other in the balance as main effects, but may also interact in the form of synergetic or buffering effects. More parental resources appeared to mitigate the association between parenting stress in the child domain and child behaviour problems. Parental adaptive functioning can be regarded as one such resource, but the independent moderating effect only approached significance. Exploratory analyses suggested that higher functioning parents may be less stressed when faced with child behaviour problems. The independent moderating effect of social network size was significant, showing that parents with ID are especially vulnerable to stress if their support network is small. These results confirm the buffering hypothesis for social resources and, to a lesser extent, adaptive functioning. Overall, the findings are more suggestive of contextual compensation or buffering factors for parenting stress than personal factors indicated by the adaptive functioning of parents with ID.

The association between child behaviour problems and the two domains of parenting stress had not previously been studied in parents with ID. The present result that parents with ID experience higher levels of child-related parenting stress when children exhibit greater behaviour problems, but not higher levels of parenting stress attributed to oneself as a parent, contradicts findings among parents without ID

(Abidin, 1992; Eyberg et al., 1993; Rodriguez, 2011). In these studies, child behaviour was associated with both parent and child-related parenting stress. Differences in attribution styles between people with and without ID may be one explanation for the discrepancy. Persons with ID have shown a higher tendency for an external locus of control than persons without ID (Shogren et al., 2010). This possible explanation requires further investigation.

The current study found a buffering effect of access to social support on the association between child problem behaviour and parenting stress in the child domain for parents with ID. This finding corresponds to earlier findings that identified social support as a protective factor among parents with ID (International Association for the Scientific Study of Intellectual Disabilities, Special Interest Research Group on Parents and Parenting with Intellectual Disabilities (IASSID), 2008; Willems et al., 2007). The current results may be the first to show the stress-buffering mechanism behind the protective role of access to support for parents with ID as hypothesized for other parent populations (Armstrong et al., 2005). This finding is important given the doubts and negative expectations that social network members have been found to have when their family member or friend with ID has children (Aunos & Feldman, 2002). Despite such doubts, parents with ID and their network members may still be able to achieve the good quality relationships necessary for the experience of social support (Merz et al., 2009).

The lack of a main effect and the weak buffering effect of adaptive functioning may be seen to contradict the perceptions of professionals, who identified higher levels of intellectual functioning as a protective factor in families in which the parents have ID (Willems et al., 2007). However, Willems et al. (2007) included participants with an IQ of up to 70, whereas the sample in the current study connects to the literature on parents with ID that includes parents with IQ scores range up to 85 or higher (e.g., Llewellyn & McConnell, 2002). Among the relatively broad range of participants in this study, the trend for a buffering effect of adaptive functioning indicated that a small effect may still be present if tested in larger samples (a power analysis showed that a sample size of 253 is needed for the observed effect to be tested as significant with a power of 0.70). Therefore, further research on parents with ID that includes levels of cognitive or adaptive functioning is necessary. In the current study, financial resources did not appear to dampen the effect of child behaviour on parenting stress. Financial resources were directly and negatively related to parenting stress, which is consistent with outcomes of research among support-receiving high risk families (McConnell et al., 2011).

A substantial proportion of children in this study, 42%, exhibited behaviour problems in the subclinical or clinical range. Even though a description of child behaviour

problems was not the aim of this study, the present results need to be considered against the background of earlier studies on children born to parents with ID. Studies have not yet reached a consensus on the prevalence of problem behaviours in children of parents with ID (Collings & Llewellyn, 2012). Comparing the prevalence rate in the current study to results from other studies is difficult because one must take into account differences in the measures used. Two studies reported in the review by Collings and Llewellyn (2012) used the CBCL, which is a parent report version of the (C-)TRF. In these studies, 25% (Feldman & Walton-Allen, 1997) and 18% (Aunos et al., 2008) of the children had behaviour problems in the clinical range, compared to 26% (31% of the boys and 21% of the girls) in the current study. Notably, the current study was based on reports from teachers or the parents' support workers, not parental reports. In addition, the studies differed in child age range; Feldman and Walton-Allen (1997) included primary school children and Aunos et al., (2008) included children aged 2 to 13 years. Furthermore, unlike other studies on outcomes for children of parents with ID (e.g., Feldman et al., 2012), participants in the current study were not selected from a child protection sample.

Strengths and limitations

One strength of the present study was the large sample size compared to other studies on parenting stress among parents with ID (Aunos et al., 2008; Feldman et al., 1997, 2002). With this sample size, moderator analyses could be conducted, which are still scarce in the field of intellectual and developmental disability research (Farmer, 2012). The moderator analyses yielded more insight into individual differences among parents with ID regarding their perception of stress in relation to their child's behaviour. The multi-informant design ensured that associations between stress and child behaviour problems could not be explained by the response tendencies of the participants. Even though parents', teachers', and clinicians' ratings of child behaviour may differ (Ferdinand et al., 2003), teacher ratings are a predictor of poor outcomes and revealed even stronger associations with outcome criteria than parent reports (Verhulst et al., 1994).

Due to the cross-sectional design, no definitive conclusions can be drawn regarding the direction of effects in the relationship between parenting stress and child behaviour problems. Child behaviour may affect parenting stress, parenting stress may affect child behaviour, and they probably both influence each other in a vicious circle (Neece et al., 2012). Longitudinal and experimental studies of parents with ID are needed to disentangle these effects and to establish whether the purported resilience factors in this study may, over time, also contribute to positive outcomes in the children of parents with ID. Furthermore, despite the relatively large size of the

sample (almost 10% of the estimated 1,500 families in the Netherlands with a parent with ID; Willems et al., 2007), the sample only represents parents with ID served by care organizations for persons with ID. Parents with ID who did not receive services were not included due to the sampling method.

Child behaviour and the buffering factors included in this study explained 12% of the variance in child-related parenting stress. To expand our understanding of parenting stress, future studies should explore other factors, such as indicators of the quality of support and parental mental health (Abidin, 1992, Renner, 2009).

Implications

Parents with ID appeared vulnerable to experiencing parenting stress but, based on the current findings, this vulnerability concerns the stress attributed to the challenges presented by the child, not the challenges presented by their own capabilities or the family situation. This vulnerability may depend in part on personal factors, although the current study did not provide clear evidence that adaptive functioning may play a role. The social context was shown to be important as a source of resilience, and financial resources may compensate for other sources of stress. Unfortunately, parents with ID often lack these resources (IASSID, 2008). Informal support networks of parents with ID are often small (Llewellyn & McConnell, 2002), and members of the social network of parents with ID are more likely to have difficulties supporting the parent (Mayes et al., 2008). Interventions to strengthen supportive networks for parents with ID have been developed and shown improvements in parent psychological well-being by improving social support (Darbyshire & Kroese, 2012).

Building a good working alliance to support families with a parent with ID may start from a shared concern for child behaviour difficulties. The association between child behaviour problems and child-related parenting stress, and not parent-related parenting stress, suggests that parents with ID direct their initial concerns towards the difficulties in their children's behaviour (which in this sample characterized 42% of the children), rather than towards their own and their family's capacity to raise children well. This observation confirms the idea that child-related stress or concerns may be the common ground for building a good working alliance with parents with ID (Llewellyn et al., 1998). The joint goal of a child's well-being may also be an avenue to explore other aspects of the parents' own functioning, and that of their family, which may alleviate their stress and benefit the children. The differential results for child-related and parent-related stress may increase professionals' awareness of parenting stress as a multi-dimensional concept.

A stress-resources perspective, as employed in this study, emphasizes the importance of considering the balance between positive and negative factors when parents

have ID. The present findings highlight the potential protective abilities of contextual resources in addition to adaptive functioning as a personal resource. This balance model connects well with the approach of functional-contextual assessment in the context of child protection (Benjet et al., 2003) and with assessing parenting capacity by evaluating both parenting skills and considering the role of ecological factors (IASSID, 2008). Increased stress related to the child may negatively affect parent-child interactions, leading to further difficulties. In addition, the current empirical findings lend further support to recommendations to consider positive contextual influences to reinforce the effectiveness of interventions (Wade et al., 2008). Therefore, efforts are needed to strengthen contextual resources for parents, alongside the development of effective parenting intervention programs that are tailored to the needs of parents with ID.

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