Passed for Press

I confirm that the enclosed article for the European Journal of Psychological Assessment e							
is ready f	or press after the correc	tions indicated have been carried out.					
 Date	Signature	Name (block letters)					

Please check the enclosed proofs for typesetting errors, and indicate any unavoidable corrections that must be carried out before the article is sent to press. Proof corrections that represent a change from or an addition to the original manuscript should be avoided. Depending on the extent of such changes or additions, the author may be invoiced for the extra costs that result. Please send the signed "Passed for Press" statement along with the corrected proofs to the address given below.

Copyright: Guidelines for Authors

By submitting an article, the author confirms and guarantees on behalf of him-/herself and any coauthors that he or she holds all copyright in and titles to the submitted contribution, including any figures, photographs, line drawings, plans, maps, sketches, and tables, and that the article and its contents do not infringe in any way on the rights of third parties.

The author agrees, upon acceptance of the article for publication, to transfer to the publisher the exclusive right to reproduce and distribute the article and its contents, both physically and in non-physical, electronic, or other form, in the journal to which it has been submitted and in other independent publications, with no limitations on the number of copies or on the form or the extent of distribution. These rights are transferred for the duration of copyright as defined by international law. Furthermore, the author transfers to the publisher the following exclusive rights to the article and its contents:

- The rights to produce advance copies, reprints or offprints of the article, in full or in part, to undertake or allow translations into other languages, to distribute other forms or modified versions of the article, and to produce and distribute summaries or abstracts.
- 2. The rights to microfilm and microfiche editions or similar, to the use of the article and its contents in videotext, teletext, and similar systems, to recordings or reproduction using other media, digital or analogue, including electronic, magnetic, and optical media, and in multimedia form, as well as for public broadcasting in radio, television, or other forms of broadcast.
- 3. The rights to store the article and its contents in machine-readable or electronic form on all media (such as computer disks, compact disks, magnetic tape), to store the article and its contents in online databases belonging to the publisher or to third parties for viewing or for downloading by third parties, and to present or reproduce the article or its contents on visual display screens, monitors, and similar devices, either directly or via data transmission.

- The rights to reproduce and distribute the article and its contents by all other means, including photomechanical and similar processes (such as photocopying or facsimile), and as part of so-called document delivery services.
- The right to transfer any or all of the rights mentioned in this agreement, as well as the rights retained by the relevant copyright clearing centers, including the corresponding royalty rights to third parties.
 - Online Rights for Journal Articles
 Authors of articles in journals published by the Hogrefe
 Group may post a copy of the final accepted manuscript
 for non-commercial purposes, as a word-processor, PDF,
 or other type of file, on their personal web page or on their
 employer's website after it has been accepted for
 publication. The following conditions apply:
 - Only the final draft manuscript post-refereeing shall be used for this purpose, not the published version, and this final draft manuscript may only be posted 12 months after the article has been published.
 - The posted version of the article must carry the
 publisher's copyright notice in the form "[Journal Title],
 [Volume No.], [Issue No.], © [Year] by [Publisher's
 name]", (as it appears in the published journal/article) and
 a link to the publisher's journal home page must be
 included.
 - Further, the posted article must include the following statement: "This article does not exactly replicate the final version published in the journal "[Add title of Journal]". It is not a copy of the original published article and is not suitable for citation."

The publisher does not permit archiving in any repositories other than the publisher's own.

The publisher cannot provide electronic copies of the published version of the article for posting. Creation of an electronic or digital copy of the published version of the article for the purposes of posting or distributing it is not permitted.

(June 7, 2006)

Hogrefe & Huber Publishers GmbH Rohnsweg 25, 37085 Göttingen, Germany Tel. +49 (551) 49609-0 Fax +49 (551) 49609-88 HH@hogrefe.com www.hhpub.com

CEO: Dr. G.-Jürgen Hogrefe Registered: Amtsgericht Göttingen HRB 2224 VAT#: DE 115303194

european journal of

psychological assessment

.....

additional copies

25 complimentary copies plus

Order Form for Reprints

Title of paper:

Quantity of reprints:

You will receive 25 reprints of your paper free of charge. Additional copies will be charged as indicated below.

Address:								
	••••							
	•••••	•••••	••••••	•••••	•••••	••••••	•••••	•••••
Order date:			Signatu	ıre:		•••••	•••••	
Prices for additional	reprints*:							
pages/copies		25	50		100	+100		
2-8		€ 35.00	€ 65.0	0	€ 115.00	€ 10	€ 100.00	
10–16		€ 65.00	€ 115.0	€ 115.00 € 215.00		€ 200.00		
18–24		€ 90.00	€ 165.0	00 € 315.00		€ 300.00		
*Shipping & handling in	ncluded; with	orders from countrie	s within the E	uropean	Union, 7% VAT mu	st be added	for rep	orints
unless a VAT number is								
		Or	der Form	1				
[[Hogr	efe & Huber	Publish	ers	#
"		☐ MasterCard		Konnsv	veg 25 · D-3/085 (ouingen · C	Jerma	.ny
	Card # Phone +49 551 49609-0 · Fax +49 551 49609-88 CVV2/DVC2/CID # E-mail hhpub@hogrefe.com							
Expiry Date:				L-man	impub@nogicic.co)111		
Signature:								<u> </u>
☐ Please bill me ☐ Cash enclosed ☐ Check enclosed I would like to								
☐ I am interested in becoming a member of the European					subscribe/order		Qty	Total
Association of Psychological Assessment.			EJPA: Individual		109.00			
Name			EJPA	: Institution	197.00			
Title/Affiliation			Reprints (see above)					
Street				Subtotal				
CityState			Shipping + handling € 12.00 for each subscription					
Zip Country					Total			
Telephone ()			<u> </u>				

Measuring Parenting Dimensions in Middle Childhood

Multitrait-Multimethod Analysis of Child, Mother, and Father Ratings

Sofie Kuppens¹, Hans Grietens¹, Patrick Onghena², and Daisy Michiels¹

¹Centre for Parenting, Child Welfare & Disabilities, Department of Educational Sciences, ²Centre for Methodology of Educational Research, Department of Educational Sciences, both K.U. Leuven, Belgium

Abstract. Questionnaire ratings were used to obtain child, mother, and father ratings on three major parenting dimensions (behavioral control, psychological control, and support) in a sample of 600 children aged 8-to-10 years old. Results indicated that mothers, fathers, and children were able to reliably differentiate between the three parenting dimensions by means of questionnaire ratings. Convergent and discriminant validity were tested by analyzing a multitrait-multimethod matrix via confirmatory factor analysis. Convergence between mothers and fathers was satisfactory, while convergence between child and parents was significant, but fairly low. Discriminant validity was sufficiently supported, whereas informant-specific error was related to both child and father ratings. Criterion validity of the parenting dimension with regard to child behavior was established. Overall, behavioral control and support were positively associated with child prosocial behavior, while psychological control was positively correlated with child conduct problems, and to a lesser extent with child internalizing problems. The nature and implications of these findings are discussed.

Keywords: parenting dimensions, middle childhood, questionnaire, multitrait-multimethod approach, child behavior

Introduction

Although the term "parenting" covers a vast number of issues within the literature, there is a remarkable consensus among social scientists about the existence of at least two broad dimensions of parenting, namely parental support and parental control (Cummings, Davies, & Campbell, 2000). Support pertains to the affective nature of the parent-child relationship, indicated by showing involvement, acceptance, emotional availability, warmth, and responsivity (Cummings et al., 2000). The control dimension has been subdivided into psychological and behavioral control (Barber, 1996; Schaefer, 1965; Steinberg, 1990). Psychological control refers to an intrusive type of control in which parents attempt to manipulate children's thoughts, emotions, and feelings (Barber, 1996). Behavioral control, on the other hand, pertains to parenting behaviors that attempt to control, manage, or regulate child behavior (Steinberg, 1990). These three parenting dimensions (support, psychological control, and behavioral control) have been labeled conceptually distinct, although they are related to some extent. A recent longitudinal study (Barber, Stolz, Olsen, Collins, & Burchinal, 2005) revealed strong positive correlations between support and behavioral control (mean r = .58), whereas strong negative correlations between support and psychological control (mean r = -.56) emerged.

Although Barber, Olsen, and Shagle (1994) stated that behavioral and psychological control were conceptually orthogonal, moderate negative correlations were found in adolescent samples (r = -.39; Barber et al., 2005) and low negative correlations in young children (r = -.13; Morris et al., 2002). Past research has also clearly documented the interplay between these parenting dimensions and child development. Support and behavioral control have been linked with positive child behavior, while psychological control has solely been associated with negative child behavior, particularly with internalizing but also with externalizing problem behavior (Barber, 1996; Rubin & Burgess, 2002). Given this profound impact, accurately assessing parenting practices is crucial for research and practice. Nevertheless, parenting research has been hampered by several unresolved issues with regard to the assessment of parenting in middle childhood. The foremost issue is that research in middle childhood has mainly focused on support and behavioral control, whereas psychological control has predominantly been addressed during preadolescence and adolescence. This is probably related to the centrality of psychological autonomy during adolescence, which is violated by psychological control. Nevertheless, psychological control has also been linked with negative outcomes in school-aged children (Morris et al., 2002; Nelson & Crick, 2002).

Second, questionnaires have, by far, been the most frequently used assessment method in parenting research. This widespread use likely relates to their easy-to-use, cost-effective, and time-efficient nature. However, because questionnaires reflect parenting practices as perceived by a particular informant, reports may contain informant-specific error, such as fake-good behavior or socially desirable answering tendencies. Accordingly, several researchers have stressed using multiple informants in order diminish the drawbacks associated with single informant reports (e.g., Janssens, De Bruyn, Manders, & Scholte, 2005; Schwarz, Barton-Henry, & Pruzinsky, 1985).

Most studies on parenting in middle childhood, however, have relied on single informant information. During this developmental period, parents have mostly reported on their own parenting practices, whereas in adolescence the widely used Child Report of Parent Behavior Inventory (Schaefer, 1965) has shown reliable and valid ratings on the three basic parenting dimensions (Krishnakumar, Buehler, & Barber, 2004; Rogers, Buchanan, & Winchell, 2003; Schwarz et al., 1985). In middle childhood, however, researchers have rarely mapped children's perceptions. Nevertheless, parenting practices as perceived by children may have the strongest impact on future development (Bögels & Van Melick, 2004; Morris et al., 2002; Schaefer, 1965). Researchers have long underestimated children's abilities to report on their own experiences, whereas recent research (Morris et al., 2002) has clearly demonstrated that even young children provided valid and reliable responses on parenting practices using a puppet interview. Interviewing, however, is time-consuming, costly, and demanding (e.g., trained interviewers are required to diminish interviewer effects), while information is only acquired via a single informant, namely the child. With regard to questionnaires, initial evidence has shown favorable psychometric properties for child ratings (7 to 15 years) of behavioral control and support (Van Leeuwen & Vermulst, 2004), whereas child reports for psychological control have rarely been used in middle childhood. Bögels and Van Melick (2004), however, have shown fairly adequate internal consistency values for child reports on the Psychological Control Scale - Youth Self Report (Barber, 1996) in a sample of 8- to 13-year-old children. Nevertheless, the question whether young children (< 11 years) are able to reliably and validly report on parenting dimensions by means of a questionnaire remains unaddressed.

Third, although researchers have recommended using multiple informants in order to grasp the complex nature of parenting, little is known about whether parents and children provide converging reports on parenting dimensions in middle childhood. However, within the broader family research literature multitrait-multimethod designs (MTMM; Campbell & Fiske, 1959) have frequently been applied to investigate convergent and discriminant validity of several traits assessed by multiple informants. While correlational research has usually demonstrated low to moderate agreement among child and parent reports on par-

enting variables (Gonzales, Cauce, & Mason, 1996; Schwarz et al., 1985; Shelton, Frick, & Wootton, 1996; Sessa, Avenevoli, Steinberg, & Morris, 2001; Tein, Roosa, & Michaels, 1994), more sophisticated approaches to analyze MTMM- designs have revealed that child and parent reports on parenting and family constructs converged if informant-specific error was taken into account (Cook & Goldstein, 1993; Jacob & Windle, 1999; Ten Haaf, Janssens, & Gerris, 1994; Villar, Luengo, Gómez-Fraguela, & Romero, 2006). As such, confirmatory factor analysis (CFA) has become a valuable tool to evaluate multiple informant reports on parenting or family variables because it separates variance caused by the unique perspective of informants from variance caused by the communality among the different informant perspectives.

The goal of this study was to evaluate and compare questionnaire ratings reflecting the three basic parenting dimensions within a middle-childhood sample. Fathers and mothers reported on their own parenting practices (i.e., support, behavioral and psychological control) and on their partners' psychologically controlling behavior. For behavioral control and support parents only completed a self-report because of battery-length concerns (the items were part of a 60-item questionnaire). Children reported on both maternal and paternal parenting behavior toward them. Consequently, for both parent-child dyads three different constructs were measured via two or three different informants, depending on the construct. The present study had three main objectives.

First, this study examined whether, separately, mothers, fathers, and children provided valid and reliable ratings on the predefined three-dimensional parenting framework. We expected to support the proposed three-factor structure and to obtain adequate internal consistency values for each informant. An existing Flemish questionnaire, mapping parenting practices directed at 8- to 14-year-old children, was used to assess support and behavioral control (i.e., Ghent Parental Behavior Scale; Van Leeuwen & Vermulst, 2004). A questionnaire specifically developed to assess psychological control in middle childhood, however, was unavailable. Barber's (1996) Psychological Control Scale – Youth Self Report (PCS-YSR), however, has frequently been used to assess psychological control during adolescence. The PCS-YSR is an adaptation of the first instrument that included a specific subscale on psychological control, namely the Child Report of Parent Behavior Inventory (CRPBI; Schaefer, 1965). Favorable psychometric properties for the PCS have emerged in adolescent and preadolescent samples (Barber, 1996; Sturge-Apple, Gondoli, Bonds, & Salem, 2003) and promising internal consistency values for parent reports have been found in middle childhood (Nelson & Crick, 2002). Based on these preliminary findings, we decided to examine the usefulness of Barber's PCS-YRS as a questionnaire to assess psychological control during middle childhood, instead of developing a new questionnaire.

Second, convergent and discriminant validity of these

multiple informant reports on paternal and maternal parenting were tested through CFA of the MTMM matrix (Campbell & Fiske, 1959). The three parenting dimensions were regarded as three distinct latent traits, while the separate informant reports were viewed as different methods to assess each trait. Hence, the resulting factor loadings pertaining to different informant reports for the same trait reflected the degree of convergence, whereas discriminant validity was directly derived from the intercorrelations between the three latent traits. Method effects or informant-specific errors were indirectly inferred by allowing the error terms of reports by the same informant to correlate. Based on previous research (Barber et al., 1994, 2005; Morris et al., 2002), convergent validity was expected to be supported after informant-specific error was taken into account. Regarding discriminant validity, behavioral control was hypothesized to correlate positively with support, psychological control and support were expected to correlate negatively, and rather weak correlations between psychological and behavioral control were supposed to emerge. Third, criterion validity was examined by correlating informants' ratings with validated measures on child behavior, which have been conceived as a function of the parenting dimensions. Generally speaking, we expected to find positive associations between children's prosocial behavior and both support and behavioral control. On the other hand, we anticipated finding positive associations between psychological control and children's behavioral difficulties, in particular with internalizing and, to a lesser extent, with externalizing problem behavior.

Method

Sample

A proportionally stratified random sample of elementaryschool children enrolled in regular Flemish schools was drawn. For 600 children (66%), parental consent was obtained. For 556 children both parents also participated, while for the remaining 44 children only mother (n = 40)or father (n = 4) agreed to participate in the study (83.5%)married biological parents). Children's age (301 boys, 299 girls) ranged from 8 to 10 years (M = 9.27, SD = 0.83). Mothers' and fathers' age averaged 38.09 (SD = 4.00) and 40.39 years (SD = 4.85), respectively. Most children were of Belgian origin (92%). The remaining children were of European (n = 28), African (n = 7), North-American (n =1), Central-American (n = 1), South-American (n = 2), Middle-Eastern (n = 1), Asian (n = 1), or unknown (n = 7)origin. As a measure for socioeconomic status, on average both mothers and fathers received 12 to 15 years of education. Given that 588 (98%) children, 583 mothers (98%),

and 538 fathers (96%) actually completed the questionnaire, nonresponse was fairly low.

Measures

Parenting Dimensions

In total, 24 items were used to measure the three parenting dimensions. Sixteen items were retrieved from the Ghent Parental Behavior Scale, which has yielded acceptable psychometric properties in previous research (Van Leeuwen & Vermulst, 2004). In the present study, behavioral control was operationalized by eight items that reflect the extent to which parents provide rules for their children's behavior (e.g., "I teach my child that it is important to behave properly"; "I teach my child to obey rules"). Support was measured by means of eight items pertaining to parental involvement and social reinforcement (e.g., "I make time to listen to my child, when he/she wants to tell me something"; "I give my child a compliment, hug, or a tap on the shoulder as a reward for good behavior"). Each item was scored on a 5-point scale from 1 = never true to 5 = alwaystrue. Child, mother, and father reports were applied.

The eight items on psychological control were derived from the PCS - YSR (Barber, 1996). This unidimensional scale includes items on invalidating feelings, constraining verbal expressions, personal attack, and love withdrawal (e.g., "I am less friendly with my child when (s)he doesn't see things my way"; "If my child has hurt my feelings, I don't speak to him/her until (s)he pleases me again"). Again, each item was scored on a 5-point scale. The original PCS-YSR was translated into Dutch¹ via back-translation using two groups of bilinguals. The translated instrument was field tested using a group of 8- and 9-year-olds (N = 23) to ensure that the translation was understood by the youngest age groups. As such, two items were slightly reworded as they were too abstract for the children to grasp (i.e., "... my thoughts and feelings about things" was rephrased to "... my opinion about things," "... she criticizes me" was rephrased to "... she says I am doing something wrong"). In addition to the child report, father, mother, and partner reports were constructed, rewording the items slightly to make them appropriate for those informants (i.e., "My mother/father interrupts me" was rephrased to "I interrupt my child" or "My partner interrupts our child").

Child Behavior

Mothers, fathers, and teachers filled in the Dutch Strengths and Difficulties Questionnaire (SDQ; Van Widenfelt, Goedhart, Treffers, & Goodman, 2003), 25 items, using a 3-point scale in order to assess child behavior. This study

Soenens, Vansteenkiste, Goossens, and Duriez (in press) also translated Barber's PCS-YSR (1996) into a Dutch adolescent report. Both translations, however, were constructed independently of each other. As such these translations are similar, but not identical.

employed the subscales conduct problems (mean α = .65), emotional symptoms (mean α = .74), and prosocial behavior (mean α = .72). An evaluation of these multiple informant reports yielded significant convergence for mother, father, and teacher reports and supported discriminant validity of the three child behavior constructs. A three-factor correlated uniqueness (CU) model of this MTMM matrix fitted the data adequately, Satorra-Bentler scaled χ^2 (SBS $\chi^2_{[16]}$) = 41.34, root-mean-square error of approximation (RMSEA) = .055, comparative fit index (CFI) = .982, standardized root-mean-square residual (SRMR) = .050. As such, latent factor scores were computed for each child behavior construct.

Statistical Analyses

With regard to testing the research questions, within-informant CFAs were conducted on the observed item scores to test the predefined three-dimensional parenting structure for each informant separately. This model specified three theoretically and empirically identified parenting dimen-

sions as separate factors. The model was tested against two competing models. A two-factor model denoted only two parenting dimensions, namely support and control, without distinguishing between psychological and behavioral control. A single-factor model represented only one general parenting dimension. Analyses were performed separately for maternal and paternal parenting using LISREL 8.71. The item's ordinal nature required using polychoric correlations in conjunction with asymptotic covariance matrices, which resulted in robust maximum likelihood estimates (Jöreskog & Sörbom, 2004).

In the context of the MTMM analyses, within-informant subscale scores were computed by summing the responses to the items pertaining to each parenting dimension. A CU model was preferred to a full correlated-trait correlated-method model (CTCM) as it is more parsimonious for small (i.e., ≤ three traits) matrices (Lance, Noble, & Scullen, 2002). The CU model features measurement error correlations among reports by the same informant (i.e., correlated uniqueness). As presented in Figure 1, the three parenting dimensions were regarded as three distinct latent traits, while the separate informant reports

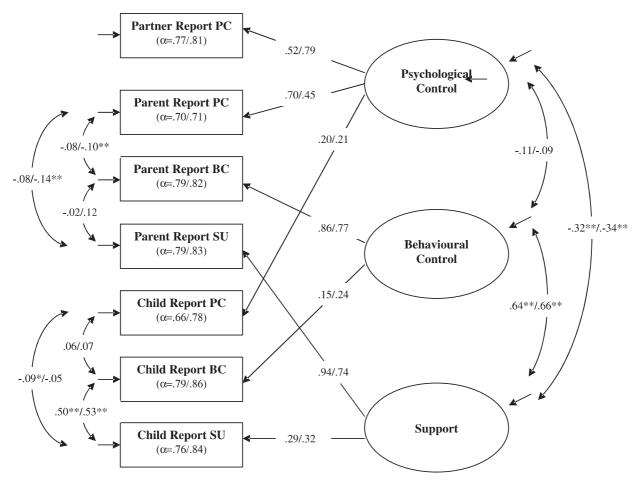


Figure 1. Standardized coefficients for the final CU-models. Results for the maternal model are shown before the slashmark and those for the paternal model after it. Internal consistency values for each informant report are reported between parentheses. PC = psychological control, BC = behavioral control, SU = support. *p < .05. **p < .001.

Tab	le 1.	Summary	of	CFA	fit	statistics
-----	-------	---------	----	-----	-----	------------

Informant	Model	SBSχ²	df	RMSEA	CFI	SRMR
CM	Single-factor	1494.90	252	.092	.844	.105
	Two-factor	1167.43	251	.079	.885	.101
	Three-factor	495.80	249	.047	.969	.072
M	Single-factor	1724.81	252	.101	.888	.118
	Two-factor	1391.48	251	.089	.914	.114
	Three-factor	602.60	249	.050	.973	.072
CF	Single-factor	2617.65	252	.128	.839	.142
	Two-factor	2067.89	251	.112	.875	.137
	Three-factor	619.38	249	.051	.975	.071
F	Single-factor	2009.25	252	.114	.867	.120
	Two-factor	1369.68	251	.091	.915	.112
	Three-factor	554.53	249	.048	.977	.069

Note. CM = child on mother; CF = child on father; M = mother on self; F = father on self; SBS χ^2 = Satorra-Bentler –Scaled χ^2 ; df = degrees of freedom; CFI = comparative fit index; RMSEA = root-mean-square error of approximation; SRMR = standardized root-mean-square residual.

were viewed as different methods to assess each trait. As advocated by Marsh (1989), this hypothesized model was compared against two competing models. The baseline model presumed that the observed subscale scores of each informant loaded separately. Moreover, these latent factors were assumed to be uncorrelated, resulting in a model with seven uncorrelated latent factors. The second model specified one general latent trait factor and correlated uniqueness. Models were fitted separately for maternal and paternal data. Given deviations from multivariate normality for maternal (skewness Z = 6.13, p < .001; kurtosis Z = 72.81, p < .001) and paternal data (skewness Z = 4.30, p < .001; kurtosis Z = 68.92, p < .001), asymptotic covariance matrices were used, resulting in robust maximum likelihood estimates.

Internal consistencies were determined by computing Cronbach's α for the subscales, as reported by each informant, to examine the reliability of the observed scores. Pearson correlations between parenting dimensions and child behaviors were computed using latent factor scores to establish criterion validity.

SBS χ^2 statistics were obtained during CFA analyses. However, because χ^2 fit statistics are highly sensitive to sample size, several alternative goodness-of-fit statistics were used to assess the models' fit: CFI, RMSEA, and (SRMR). CFI values equal to or higher than 0.95, RMSEA values equal to or lower than 0.06, and SRMR values equal to or lower than 0.08 are usually considered as indicating adequate fit (Hu & Bentler, 1999). Competing models were compared by means of the scaled χ^2 difference test (scaled- $\Delta \chi^2$; Satorra & Bentler, 2001). Missing item-level values were imputed by means of the EM (expectation-maximization) algorithm, except when all items of a questionnaire by a particular informant were missing. Imputations were based on the informant's response to the remaining items of a particular questionnaire.

Results

Factorial Validity

Similar findings emerged for each within-informant CFA (Table 1). Although the two-factor model improved upon the single-factor model, as indicated by significant (p < .001) scaled χ^2 difference tests, only the three-factor model yielded an adequate fit to the maternal and paternal data, as indicated by appropriate goodness-of-fit indices for each informant. Factor loadings were significant (p < .001) and mostly above .40. Six out of the 96 factor loadings were lower than .40, yet higher than .30.

Reliability

The within-informant internal consistencies of the subscales are reported in Figure 1. Overall, the subscales demonstrated acceptable to high internal consistency values ($\alpha > .70$). Only the child report on maternal psychological control was slightly less internally consistent ($\alpha = .66$). Although not included in the previous analyses, partner ratings on psychological control both yielded good α values.

Multitrait-Multimethod Analyses

Simple correlations between informant reports indicated that for psychological control child reports correlated weakly with parent (r_{mother} = .13, p < .01; r_{father} = .06, p = .185) and partner reports (r_{mother} = .09, p < .05; r_{father} = .17, p < .001), while parent and partner reports (r_{mother} = .36, p < .001; r_{father} = .35, p < .001) correlated moderately. Small correlations emerged between child and parent reports for both behavioral control (r_{mother} = .10, p < .05; r_{father} = .20, p < .001) and support (r_{mother} = .26, p < .001; r_{father} = .25, p < .001).

		1			
Model	$\text{SBS}\chi^2$	df	RSMEA	CFI	SRMR
Maternal parenting					
1. Null model: 7 uncorrelated factors	437.202	21	.198	.098	.185
2. CU: one general trait factor	41.113	8	.090	.928	.061
3. CU: three trait factors	7.682	5	.033	.994	.025
Paternal parenting					
1. Null model: 7 uncorrelated factors	436.018	21	.197	.190	.194
2. CU: one general trait factor	40.501	8	.090	.937	.063
3. CU: three trait factors	6.498	5	.024	.997	.021

Table 2. Fit statistics for CU-models of maternal and paternal parenting

Note: SBS χ^2 = Satorra-Bentler – Scaled χ^2 ; df = degrees of freedom; CFI = comparative fit index; RMSEA = root-mean-square error of approximation; SRMR = standardized root-mean-square residual.

As presented in Table 2, the baseline model fitted the data poorly. The second model, however, improved upon the baseline model as reflected by significant scaled χ^2 difference tests (maternal model: scaled- $\Delta\chi^2(13) = 385.40$, p < .001; paternal model: scaled- $\Delta\chi^2(13) = 367.62$, p < .001), but still yielded poor goodness-of-fit indices. The third model not only significantly improved upon the previous model (maternal model: scaled- $\Delta\chi^2(3) = 33.43$, p < .001; paternal model: scaled- $\Delta\chi^2(3) = 32.62$, p < .001), but also fitted both maternal and paternal data adequately as indicated by appropriate goodness-of-fit indices. Standardized coefficients are depicted in Figure 1.

Convergent Validity

Overall, both mother and father ratings yielded significant moderate to high factor loadings. The loadings for child ratings were significant (p < .05), yet less pronounced. Thus, although informants' ratings shared some common variance, child ratings contributed less to different trait factors and contained more error.

Discriminant Validity

For both maternal and paternal data, findings pointed out that behavioral and psychological control were clearly distinguished, while support correlated moderately negatively with psychological and strongly positively with behavioral control.

Method Effects

As indicated by several significantly correlated within-informant measurement errors, both child and father ratings were contaminated with systematic informant variance. Mother ratings, however, were free from systematic informant variance, as indicated by nonsignificant measurement error correlations.

Criterion Validity

Correlations between parenting dimensions and child behaviors were computed using latent factor scores, separately for maternal and paternal parenting. Prosocial behavior was positively associated with behavioral control (r_{mother} = .33, p < .001; $r_{\text{father}} = .18$, p < .001) and support ($r_{\text{mother}} = .33$, p < .001; $r_{\text{father}} = .21$, p < .001), while correlations with psychological control were negative ($r_{\text{mother}} = -.30$, p < .001; r_{father} = -.22, p < .001). Conduct problems were positively associated with psychological control (r_{mother} = .30, p < .001; r_{father} = .27, p < .001), negatively with support (r_{mother} = -.25, p < .001; $r_{\text{father}} = .15$, p < .01), and negatively with maternal behavior control ($r_{\text{mother}} = -.16$, p < .001; $r_{\text{father}} = .01$, p =.823). Emotional symptoms correlated positively with psychological control (r_{mother} = .14, p < .001; r_{father} = .17, p < .001), while correlations with paternal behavioral control $(r_{\text{mother}} = .04, p = .393; r_{\text{father}} = -.13, p < .01)$ and paternal support (r_{mother} = .01, p = .748; r_{father} = -.15, p < .01) were negative. Overall, correlations involving emotional symptoms were less pronounced.

Discussion

In general, findings demonstrated adequate psychometric properties for child, mother, and father ratings. These preliminary findings suggest that questionnaires are a valuable tool to cost-effectively and time-efficiently gather information on the three major parenting dimensions in middle childhood via mother, father, and child reports. A closer look at the findings revealed that the reliability of children's ratings of maternal psychological control was slightly lower. Therefore, the scale may benefit from further refinement. Barber (1996) has stated that his psychological control scale already improved upon previous scales because the greater behavioral specificity of the items makes it more useful for intervention and prevention. Nevertheless, some items may still be too abstract with regard to parent-child interaction in middle childhood. Further concretizing the existing items and perhaps even including new items specifically reflecting psychologically controlling behavioral acts toward younger children seems advised. Nevertheless, the present study provided initial evidence that, during middle childhood, children actually possess the ability to reliably and validly report on parenting practices via questionnaires.

Consistent with previous findings on parenting behavior (Sessa et al., 2001) it was found that children and parents had related, yet fairly unique, perceptions. This finding could be interpreted as a convergent validity problem. However, a low convergence does not necessarily imply that one particular informant is right, while another informant is wrong. More likely, this low convergence reflects meaningful and important differences in the perceptions of parents and children. For example, in the present study parent-child relationships were primarily perceived as supportive relationships in which parents provided rules for children's behavior, yet this view was slightly more pronounced for parents than children. Alternatively, children and parents may actually base their ratings on different events.

Findings for discriminant validity supported the hypotheses. The strong positive correlation between support and behavioral control was in line with previous research (Barber et al., 2005), reflecting a frequent cooccurrence of both dimensions. Because behavioral control and support both represent adequate parenting practices, this finding is not surprising in light of the sample's nonclinical nature. Parallel to previous research (Morris et al., 2002), psychological and behavioral control (referring to rule setting) were clearly distinct constructs. The moderate negative correlations between psychological control and support also approximated previous findings (Barber et al., 2005).

Finally, criterion validity with child behavior was established. However, it should be noted that in the present study psychological control was more explicitly linked with conduct problems than with emotional symptoms in children. This contrasts with the previously documented, marked association between psychological control and preadolescent and adolescent internalizing problems (Barber, 1996; Pettit, Laird, Dodge, Bates, & Criss, 2001). Parallel to Holmbeck, Shapera, and Hommeyer (2002), we would argue that this finding is the result of the sample's age. For 8- to 10year-olds, the effects of psychological control may be apparent as externalizing instead of internalizing problems. The externalizing problems may reflect children's early attempts to gain some independency when confronted with psychologically controlling parents. As these children grow older, internalizing symptoms may, perhaps, emerge.

The present findings suggest[OK?] some guidelines with regard to assessment approaches that researchers and practitioners may employ. In general, a multiple informant approach seems warranted to obtain a comprehensive picture of parenting practices in middle childhood. Nevertheless, findings suggest that partner reports may be a promising assessment method, but the present study only included partner ratings for psychological control. Thus, future

research is needed to confirm these findings for behavioral control and support. Because the common variance between parent and partner reports was substantial and mother ratings were free from systematic error, a more parsimonious strategy to assess parenting in middle childhood may imply using mother and mother-on-father reports, in addition to child reports.

The present study is limited because the applied methods were restricted to different informants. Future MTMM studies including informants and instruments (e.g., questionnaire vs. interview) as method factors are needed to further validate assessment procedures of parenting in middle childhood. Janssens et al. (2005) used an MTMM design with different instruments to assess parenting and concluded that method variance overshadowed trait variance. Replication of the present findings to other parenting instruments is also needed.

Acknowledgments

This study was sponsored by grants from the Special Research Fund of the K.U.Leuven and the Fund for Scientific Research Flanders (FWO). The authors are greatly indebted to Professor Brian Barber (University of Knoxville, TN, USA), who gave permission to use the Psychological Control Scale, as well as to the master students who assisted in the data collection.

References

Barber, B.K. (1996). Parental psychological control: Revisiting a neglected construct. *Child Development*, 67, 3296–3319.

Barber, B.K., Olsen, J.E., & Shagle, S.C. (1994). Associations between parental psychological and behavioral control and youth internalized and externalized behaviors. *Child Development*, 65, 1120–1136.

Barber, B.K., Stolz, H.E., Olson, J.A., Collins, W.A., & Burchinal, M. (2005). Parental support, psychological control, and behavioral control: Assessing relevance across time, culture, and method. Monographs of the Society for Research in Child Development, 70, 1–151.

Bögels, S.M., & van Melick, M. (2004). The relationship between child-report, parent self-report, and partner report of perceived parental rearing behaviors and anxiety in children and parents. *Personality and Individual Differences*, *37*, 1583–1596.

Campbell, D.T., & Fiske, D.W. (1959). Convergent and discriminant validity by the multitrait-multimethod matrix. *Psychological Bulletin*, 56, 81–105.

Cook, W.L., & Goldstein, M.J. (1993). Multiple perspectives on family relationships: A latent variables model. *Child Develop*ment, 64, 1377–1388.

Cummings, E.M., Davies, P.T., & Campbell, S.B. (2000). *Developmental psychopathology and family process*. New York: Guilford.

Gonzales, N.A., Cauce, A.M., & Mason, C.A. (1996). Interobserver agreement in the assessment of parental behavior and

- parent-adolescent conflict: African American mothers, daughters, and independent observers. *Child Development*, 67, 1483–1498.
- Holmbeck, G.N., Shapera, W.E., & Hommeyer, J.S. (2002). Observed and perceived parenting behaviors and psychosocial adjustment in preadolescents with spina bifida. In B.K. Barber (Ed.), *Intrusive parenting: How psychological control affects children and adolescents* (pp. 191–234). Washington, DC: American Psychological Association.
- Hu, L., & Bentler, P.M. (1999). Cutoff criterion for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. *Structural Equation Modeling*, 6, 1–55.
- Jacob, T., & Windle, M. (1999). Family assessment: Instrument dimensionality and correspondence across family reporters. *Journal of Family Psychology*, 13, 339–354.
- Janssens, J.M.A.M., De Bruyn, E.E.J., Manders, W.A., & Scholte, R.H.J. (2005). The multitrait-multimethod approach in family assessment: Mutual parent-child relationships assessed by questionnaires and observations. *European Journal of Psychological Assessment*, 21, 232–239.
- Jöreskog, K.G., & Sörbom, D. (2004). *Interactive Lisrel*. Lincolnwood[**state please**]: Scientific Software International.
- Krishnakumar, A., Buehler, C., & Barber, B.K. (2004). Cross-ethnic equivalence of socialization measures in European American and African American families. *Journal of Marriage and Family*, 66, 809–820.
- Lance, C.E., Noble, C.L., & Scullen, S.E. (2002). A critique of the correlated trait, correlated method, and correlated uniqueness models for multitrait-multimethod data. *Psychological Methods*, 7, 228–244.
- Marsh, H.W. (1989). Confirmatory factor analyses of multitrait-multimethod data: Many problems and a few solutions. *Applied Psychological Measurement*, *13*, 335–361.
- Morris, A.S., Steinberg, L., Sessa, F.M., Avenevoli, S., Silk, J.S., & Essex, M.J. (2002). Measuring children's perception of psychological control: Developmental and conceptual considerations. In B.K. Barber (Ed.), *Intrusive parenting: How psychological control affects children and adolescents* (pp. 125–160). Washington, DC: American Psychological Association.
- Nelson, D.A., & Crick, N.R. (2002). Parental psychological control: Implications for childhood physical and relational aggression. In B.K. Barber (Ed.), *Intrusive parenting: How psychological control affects children and adolescents* (pp. 161–189). Washington, DC: American Psychological Association.
- Pettit, G.S., Laird, R.D., Dodge, K.A., Bates, J.E., & Criss, M.M. (2001). Antecedents and behavior-problem outcomes of parental monitoring and psychological control in early adolescence. *Child Development*, 72, 583–598.
- Rogers, K.N., Buchanan, C.M., & Winchell, M.E. (2003). Psychological control during early adolescence: Links to adjustment in different parent/adolescent dyads. *Journal of Early Adolescence*, 23, 349–383.
- Rubin, K.H., & Burgess, K.B. (2002). Parents of aggressive and withdrawn children. In M.H. Bornstein (Ed.), *Handbook of parenting* (pp. 383–481). Mahwah, NJ: Erlbaum.
- Satorra, A., & Bentler, P.M. (2001). A scaled difference χ^2 test

- statistic for moment structure analysis. *Psychometrika*, 66, 507–514
- Schaefer, E.S. (1965). Children's reports of parental behavior: An inventory. *Child Development*, *36*, 413–424.
- Schwarz, J.C., Barton-Henry, M.L., & Pruzinsky, T. (1985). Assessing child-rearing behaviors: A comparison of ratings made by mother, father, child, and sibling on the CRPBI. *Child Development*, 56, 462–479.
- Sessa, F.M., Avenevoli, S., Steinberg, L., & Morris, A.S. (2001). Correspondence among informants on parenting: Preschool children, mothers, and observers. *Journal of Family Psychol*ogy, 15, 53–68.
- Shelton, K.K., Frick, P.J., & Wootton, J. (1996). Assessment of parenting practices in families of elementary school-aged children. *Journal of Clinical Child Psychology*, 25, 317–329.
- Soenens, B., Vansteenkiste, M., Goossens, L., & Duriez, B. (in press). The intervening role of relational aggression between psychological control and friendship quality. *Social Development*.
- Steinberg, L. (1990). Autonomy, conflict, and harmony in the family relation. In S.S. Feldman & G.R. Elliot (Eds.), At the threshold: The developing adolescent (pp. 255–276). Cambridge, MA: Harvard University Press.
- Sturge-Apple, M., Gondoli, D.M., Bonds, D., & Salem, N. (2003). Mothers' responsive parenting practice and psychological experience of parenting as mediators of the relation between marital conflict and mothers-preadolescent relational negativity. *Parenting*, *3*, 327–355.
- Tein, J., Roosa, M., & Michaels, M. (1994). Agreement between parent and child reports on parental behaviors. *Journal of Marriage and the Family*, *56*, 341–355.
- Ten Haaf, P.G.J., Janssens, J.M.A.M., & Gerris, J.R.M. (1994).
 Child-rearing measures: Convergent and discriminant validity.
 European Journal of Psychological Assessment, 10, 111–128.
- Van Leeuwen, K.G., & Vermulst, A.A. (2004). Some psychometric properties of the Ghent Parental Behavior Scale. *European Journal of Psychological Assessment*, 20, 283–298.
- Van Widenfelt, B.M., Goedhart, A.W., Treffers, P.D., & Goodman, R. (2003). Dutch version of the Strengths and Difficulties Questionnaire (SDQ). European Child and Adolescent Psychiatry, 12, 281–289.
- Villar, P., Luengo, M.A., Gómez-Fraguela, & Romero, E. (2006). Assessment of the validity of parenting constructs using a multitrait- multimethod model. *European Journal of Psychological Assessment*, 22, 59–68.

Sofie Kuppens

Belgium

Centre for Parenting, Child Welfare, and Disabilities K.U.Leuven Vesaliusstraat 2 P.O. Box 3765 B-3000 Leuven

E-mail sofie.kuppens@ped.kuleuven.be