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Parenting behaviour and adolescent behavioural and emotional problems: The role of self-control

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Cross-sectional data from 1359 boys and girls aged 10–14 years investigated whether parenting behaviours are directly or indirectly (through building self-control) associated with emotional (depression, stress, low self-esteem) and behavioural (delinquency, aggression) problems among adolescents. Replicating existing findings, both types of problems were directly, negatively related to adaptive parenting behaviour (high parental acceptance, strict control and monitoring, and little use of manipulative psychological control). Extending existing findings, self-control partially mediated the link between parenting behaviour and adolescent emotional and behavioural problems. Contrary to earlier suggestions, there was no sign that high self-control was associated with drawbacks or increased risk of psychosocial problems.

Introduction

Many parents hope and believe that they can help mould their children into well-adjusted adults who can control their impulses (such as by refraining from drugs, crime, and violence), who express their emotions adequately and appropriately, who are reliable and trustworthy, and who can meet their obligations, duties, and responsibilities. In short, parents want their children to be able to inhibit antisocial and destructive impulses and adjust to social norms to live happy and healthy lives, and, in most cases, they do their best to help their children to achieve this goal. The belief that parents are important and influential in helping their children to avoid social and personal problems is not only popular among parents themselves but has remained strong even though the preferred parenting styles and methods have changed repeatedly, such as from authoritarian to permissive and then to authoritative (for a review, see Grusec & Kuczynski, 1997). But do parents promote good psychosocial adjustment in their offspring directly—or indirectly, such as by building self-control?

If parental efforts affect children directly, then the ways in which they try to manage their children's behaviour should have an immediate impact on children's adjustment, especially among young adolescents (e.g., Griffin, Botvin, Scheier, Diaz, & Miller, 2000). A variety of studies have found support for this assumption by showing that parental support (e.g., giving encouragement in the face of failures), strict control (e.g., implementing solid rules), monitoring of children's activities (e.g., keeping an eye on what they are doing), and knowledge about children's whereabouts and activities are consistently related to adolescent problem behaviour. Specifically, this combination of parenting behaviours¹ seems to be adaptive in

¹ Rather than using the term parenting to indicate a specific typology (e.g., Baumrind, 1971, 1983) or a distinct parenting style (Steinberg, 1990), we use the term to indicate a combination of parental behaviours, namely parental

that it reduces both major types of adolescent problem behaviours (e.g., Darling & Steinberg, 1993). It reduces behavioural problems such as delinquency and aggression, and it also reduces emotional problems such as depression and low self-esteem. It even appears to prevent the development of psychosocial problems in the long run (e.g., Haapasalo & Tremblay, 1994; Pettit, Bates, & Dodge, 1997; Steinberg, Lamborn, Darling, Mounts, & Dornbusch, 1994; Xiaoming, Stanton, & Feigelman, 2000). Hence one hypothesis of the present study was that parenting behaviours are directly related to lower levels of children's emotional and behavioural problems.

Alternatively, indirect parental influence would entail that parents foster the development of certain aspects of their children's character that are conducive to successful psychosocial adjustment in adulthood. In this perspective, rather than preventing their children from becoming depressed or delinquent, adaptive parenting behaviour would provide children with the capacities to help themselves and to prevent them from developing psychosocial problems. Self-control is presumably one such capacity that may mediate between parental efforts and adolescent behaviour (Feldman & Weinberger, 1994; Gottfredson & Hirshi, 1990; Kremen & Block, 1998; Moffit, 1993), and indeed self-control is the modern term for what was once called "strength of character". In everyday terms, self-control describes the self-discipline and moral behaviour that are believed to be at the core of becoming a well-adjusted adult.

The scientific definition of self-control

In scientific terms, self-control refers to a person's capacity to override and inhibit socially unacceptable and undesirable

acceptance and support, constructive control and consistent rules, monitoring of and knowledge about children's activities, and restrictive or manipulative control and punishment (cf. Darling & Steinberg, 1993).

impulses and to alter and regulate one's behaviour, thoughts, and emotions (Baumeister, Heatherton, & Tice, 1994; Carver & Scheier, 1998; Muraven & Baumeister, 2000; Tangney, Baumeister, & Boone, 2004). Because it involves conscious efforts undertaken to prevent certain behaviour from occurring or to modify its form before it occurs, self-control, as we define it here, is related to several concepts in the developmental and social psychological literature that reflect an internalised capacity to regulate emotions, thoughts, and behaviour.

As such, it is related to *coping*. Coping is defined as activities undertaken to master or minimise the impact of perceived threat or challenge (e.g., Folkman, 1984). Self-control can be considered as a facilitating factor to achieve such a goal. For example, after having failed an important exam, self-control allows a student to cope by helping her to focus her attention, to concentrate, and to work effectively. It may also allow her to resist the temptation to join her friends and go out. Thus, self-control involves both the down-regulation of undesirable emotions, thoughts, and behaviour and the mobilisation of their desirable counterparts and can be considered as an important factor in coping.

Self-control is also related to *effortful control*, which Eisenberg et al. (2003) define as "the process of voluntarily initiating, avoiding, inhibiting, maintaining, or modulating the occurrence, form, intensity, or duration of feeling states" (p. 762). As such, self-control can be considered as a more general form of effortful control, because it involves efforts undertaken to influence emotions, thoughts, and behaviour that may or may not be related to feeling states. Further, it is related to *ego-control* (Block & Block, 1980), which refers to a "threshold or operating characteristic of an individual with regard to the expression or containment of impulses, feelings, and desires" (p. 43). While ego-control also involves reactive or passive control processes that mostly function beyond people's awareness (Eisenberg, Spinrad, & Morris, 2002), self-control involves voluntary and conscious control of responses of the self that tend to be effortful (e.g., Muraven & Baumeister, 2000; for a discussion see also Kuhl & Koole, in press).

Also, our definition of self-control touches on primary and secondary control in *self-regulation* (Heckhausen & Schulz, 1995). These concepts, however, encompass all possible types of control individuals exert on themselves and their environment and include undesirable behavioural regulations such as "taking drugs to change mood states" (Heckhausen & Schulz, 1995, p. 285). Self-control, as we define it, focuses on the exertion of control that stimulates desirable responses and inhibits undesirable ones. We would therefore consider taking drugs to change one's mood as a lack of self-control.

The concept most closely related to self-control as we define it here is *delay of gratification* (W. Mischel, 1974, 1981), which consists of people's capacity to forgo a more immediate, less preferred outcome to attain a more preferred outcome in the future. The ability to delay gratification increases with age, presumably due to the development of self-regulatory strategies, including the efficient allocation of attention away from the desired object (e.g., M. Mischel & Mischel, 1983; for similar findings see Murphy, Eisenberg, Fabes, Shepard, & Guthrie, 1999). As we define self-control, it encompasses the capacity to delay gratification. Not surprisingly, then, the literature uses the terms self-control and self-regulation interchangeably (Baumeister & Vohs, 2003).

Thus, in thinking about self-control, we find it useful to

adopt Baumeister et al.'s (1994) definition (cf. Muraven & Baumeister, 2000; Tangney et al., 2004). Although this definition is similar to definitions of other concepts in the literature, it combines two features that set it apart. First, self-control is defined as a conscious, wilful, and effortful human capacity. It involves the accumulation of resources and the acquisition of skills that are not designed to address any particular behaviour, thought, or emotion but to alter many responses of the self, ranging from behaviour to inner processes (for a review, see Baumeister & Vohs, 2003). Second, self-control serves to regulate socially unacceptable and undesirable impulses. In this sense, self-control involves both capacities to down-regulate unwanted responses of the self and/or capacities to activate wanted ones at the same time.

The literature on self-control identifies four major domains of self-control, namely the control of thoughts, emotions, impulses, and performance (Baumeister et al., 1994; Tangney et al., 2004). Consistent with the suggestion that self-control is desirable, ample studies consistently suggest that high levels of self-control are associated with better psychosocial adjustment and fewer problems throughout the lifespan. To illustrate: preschoolers with high levels of self-control as reported by teachers and parents have less negative emotional arousal and more social competence (Fabes et al., 1999); high school students (16-year-olds) with high levels of self-control have less drinking and eating problems (Peluso, Ricciardelli, & Williams, 1999); university students with high levels of self-control received better grades (Wolfe & Johnson, 1995); and adults with high self-control experience lower emotional distress (Gramzow, Sedikides, Panter, & Insko, 2000). Conversely, low levels of self-control are associated with severe problem behaviour. To illustrate: preadolescent and early adolescent boys with low self-control show a great risk for aggressive and delinquent behaviour (Feldman & Weinberger, 1994; Krueger, Caspi, Moffitt, White, & Stouthammer-Loeber, 1996); and adults with low self-control show more psychological aggression and physical violence (Avakame, 1998) and criminal behaviour (Longshore, 1998). Taken together, these findings suggest that self-control is an eligible mediator between parental efforts and adolescent adjustment. It represents an individual characteristic that is consistently related to emotional and behavioural problems from childhood to adulthood (Tangney et al., 2004).

Alternatively to this direct link hypothesis, an indirect link hypothesis was that the link between parenting behaviour and children's emotional and behavioural problems is mediated by self-control. In this perspective, an important task for parents is to instil self-control, especially by teaching children to regulate their thoughts, emotions, and behaviours. Adaptive parenting (i.e., high parental acceptance, strict control and monitoring, and little use of manipulative psychological control) may create an environment in which teaching and learning self-control is encouraged. Specifically, parents' tendencies to be supportive and affectionate, to express approval, and to implement firm rules may represent conditions under which children efficiently learn to resist temptations and delay gratifications (e.g., Lamborn, Mounts, Steinberg, & Dornbusch, 1991). This type of parenting not only provides for children's basic needs, it also provides a protective context for them to practise and refine their capacity for self-control. If parents are successful at this, the young person will be less likely to develop problematic behaviour (see also Gottfredson & Hirschi, 1990). Although it is commonly assumed that self-control plays an important role

in parents' educational goal of making their children "well-adjusted adults", because it provides children with capacities necessary to achieve this goal and prevent psychosocial problems, empirical studies tackling this question are scarce (for exceptions see Brody & Ge, 2001; Feldman & Weinberger, 1994; Kremen & Block, 1998). Thus, the present study investigated whether parenting behaviours affect psychosocial problems in early adolescence directly or indirectly via the mediating influence of self-control.

The relation between self-control and psychosocial problems

Surprisingly few studies have looked at how self-control is related to adjustment. In the literature, two different models have been proposed but they have rarely been compared in empirical studies. Baumeister and his colleagues (e.g., Baumeister & Heatherton, 1996; Baumeister et al., 1994; Muraven & Baumeister, 2000) have contended that the ability to regulate the self is fundamentally adaptive and produces better outcomes in all spheres of functioning, including thinking, impulsive versus planned behaviour, emotion, and performance. They propose that self-control is an ability and indeed operates like a muscle, such that increased strength affords the individual more opportunities to achieve desired outcomes. In this view, the best recipe to avoid psychosocial problems is to gradually build children's strength of controlling the self (Engels, Den Exter Blokland, Baumeister, & Finkenauer, 2001a; Muraven, Baumeister, & Tice, 1999).

In contrast, Kremen and Block (1998) have proposed that the benefits of self-control are curvilinear. On the one hand, undercontrol (defined as low self-control) leaves the individual prone to engage in impulsive, antisocial, risky, and otherwise destructive or undesirable actions. On the other hand, overcontrol (defined as very high self-control) could result in the suppression of spontaneity, creativity, and enjoyment of life. They proposed further that undercontrol would be associated with behavioural problems such as delinquency and aggression (see also Engels et al., 2001a; Feldman & Weinberger, 1994; Gottfredson & Hirschi, 1990; Moffit, 1993), whereas overcontrol would be associated with emotional problems such as depression and low self-esteem.

Thus, the two models concur on the drawbacks of low self-control, but they disagree as to whether high self-control is desirable. Hence they furnish both linear (such that low levels of self-control are associated with psychosocial adjustment) and curvilinear (such that both low and high levels of self-control are associated with psychosocial adjustment) predictions (respectively) about the link between self-control and adjustment. Hence, an additional goal of the present study was to provide evidence about the shape of this relationship so as to distinguish between these two competing models.

Gender differences

Kremen and Block (1998) also invoked self-control to offer an explanation for gender differences in the prevalence of psychosocial problems in adolescence (e.g., Wenar & Kerig, 2000). Specifically, they suggested that some parents socialise girls and boys in such a way that they foster the development of overcontrol in girls (ultimately leading to emotional problems) and undercontrol in boys (leading to behavioural problems). In their longitudinal study, parents treated their sons and

daughters differently in early childhood, which was associated with distinct gender patterns in self-control 20 years later. In support of their hypothesis, girls' self-control ranged from moderate to overcontrolled, whereas boys' self-control ranged from moderate to undercontrolled. Kremen and Block proposed that parenting patterns shaped the children's self-control, which in turn should lead to distinctive problems: girls grow up to be prone to emotional problems because of high self-control, whereas boys grow up to have behavioural problems because of low self-control.

Thus there are theoretical and empirical grounds for predicting different levels of self-control for adolescent boys and girls. Different patterns of adolescent psychosocial problems as a function of gender are proposed to be the result of these distinct gender differences in self-control due to parenting processes starting in early childhood. Hence a final goal of the present study was to investigate the link between self-control and behavioural problems among adolescent boys and emotional problems among adolescent girls. We expected self-control to mediate the effects of parenting on these problems. With respect to the proposed gender differences in self-control by Kremen and Block (1998), we expected the mediating effect of (low) self-control in the link between parenting and behavioural problems to be especially pronounced among boys, whereas we expected the mediating effect of (high) self-control in the link between parenting and emotional problems to be especially pronounced among girls.

This study is the first to investigate the links between parenting behaviours, self-control, and emotional and behavioural problems in a large sample of young adolescents. It thereby contributes to earlier research by (1) focusing on a relatively large sample of adolescent boys *and* girls, rather than just one gender (e.g., Feldman & Weinberger, 1994), (2) investigating possible links between parenting behaviours and emotional *and* behavioural problems in adolescence (i.e., many studies focused on one type of problem when investigating self-control), (3) using a self-report measure of self-control (Tangney et al., 2004) instead of relying on parents' or teachers' reports of young adolescents' level of self-control (e.g., Brody & Ge, 2001), and (4) testing competing hypotheses about the link between self-control and emotional and behavioural problems, rather than implicitly assuming a linear relationship (e.g., Brody & Ge, 2001; Feldman & Weinberger, 1994).

Method

Procedure and sample characteristics

Data were derived from a cross-sectional study among 1359 preadolescents and adolescents aged 10–14 years, conducted in the winter of 2000–2001. Six high schools in the Netherlands participated in the study. The self-report questionnaires were filled out at school, in classes consisting of 17–31 students. All students were enrolled in the first year of secondary education. Teachers received instructions on how to administer the questionnaire. Also, teachers ensured that confidentiality and anonymity were rigorously respected. Additionally, the brief introduction on the questionnaires emphasised privacy and clearly stated that no information about specific responses of participating students would be passed on to teachers or parents. Before administration of the

questionnaires, parents were informed about the aims of the study and could return a form stating that they did not want their child to participate (although some parents called the institute for additional information, none of the parents returned this form). No explicit refusals were recorded; nonresponse was exclusively due to the adolescent's absence at the day of assessment.

In total, 709 (52.2%) boys and 650 girls participated in the study. The mean age of the participants was 12.3 years ($SD = 0.52$). The large majority of adolescents (96.4%) were of Dutch origin. Eighty-eight per cent of the adolescents lived with both parents, 8% lived with their mother, 1% lived with their father, and 2% had other living arrangements (e.g., other family members, institutions, adoptive parent).

Measures

Parenting. To assess parenting behaviours, we used the parenting style index of Steinberg and colleagues (Lamborn et al., 1991; Steinberg et al., 1994). This index assesses adolescents' perception of the ways their parents raise them (for more information on these concepts see Darling & Steinberg, 1993). Steinberg and colleagues differentiate three factors, namely *acceptance / involvement* (e.g., I can talk to my parents about my problems), *strict control* (e.g., my parents know exactly what I am doing), and *psychological control* (e.g., my parents treat me coldly when I fail at school) which taps into parents' use of psychological manipulation to control the child's behaviour. Responses on the items ranged from 1 = *not at all* to 5 = *absolutely true*.

Research on the psychometric properties of this scale provides evidence for the internal consistency, external validity, and test-retest reliability of the three factors (Glasgow, Dornbusch, Troyer, Steinberg, & Ritter, 1997; Gray & Steinberg, 1999; Lamborn et al., 1991). In the present study, we used a Dutch translation of the index (Beyers & Goossens, 1999) that does not differentiate between father and mother.

The *acceptance scale* comprises of 11 items assessing the extent to which adolescents perceive their parents as supportive, stimulating, and encouraging. The internal consistency was $\alpha = .80$. The *strict control scale* assesses the extent to which adolescents perceive their parents to be knowledgeable about their whereabouts and activities and to make an effort to implement firm rules. The scale consists of 10 items ($\alpha = .65$). The *psychological control scale* assesses the extent to which adolescents perceive their parents to exert coercive, nondemocratic discipline and to discourage them to express individuality in the family. This scale consists of 9 items with a Cronbach's alpha of .68.

Self-control. To assess self-control, a Dutch translation of the self-control scale developed by Tangney et al. (2004) was employed. The self-control scale aims to assess people's ability to control their impulses, alter their emotions and thoughts, and to interrupt undesired behavioural tendencies and refrain from acting on them (for a review on the conceptualisation see Muraven & Baumeister, 2000). The original scale shows adequate internal consistency (α s between .83 and .85), test-retest reliability over a period of 3 weeks ($\alpha = .87$), and validity (Tangney et al., 2004). In our study, we used a short version of the original scale ($\alpha = .67$). The items were: "I am lazy", "I have a hard time breaking bad habits", "I wish I had more self-discipline", "I have trouble concentrat-

ing", "I change my mind fairly often", "Sometimes I can't stop myself from doing something, even if I know it is wrong", "I have trouble saying no", "I get carried away by my feelings" (all reversed scored), "I am good at resisting temptation", "I am able to work effectively toward long-term goals", "I'm not easily discouraged". Response categories ranged from 1 = *not at all* to 5 = *very much*. The reliability of the long version of the self-control scale was shown in pilot studies conducted in the Netherlands among 92 adolescents ($\alpha = .82$; Van Duijn, 2000) and among 112 adolescents aged 12–15-years following special education ($\alpha = .85$; Van Kooten, 2000). Paralleling the findings for the English versions of the scale, the short version of the Dutch version of the scale showed adequate reliability in earlier studies (Frijns, Finkenauer, Vermulst, & Engels, in press). The Dutch translation of the scale can be obtained from the first author, and the English version from the last author.

Behavioural problems. To assess behavioural problems, we used two indicators. First, similar to earlier studies, we assessed self-reported delinquency using 14 items derived from a widely employed Dutch instrument measuring the frequency with which adolescents engage in petty crime (e.g., Baerveldt & Snijders, 1994; Houtzager & Baerveldt, 1999). These items assess how many times in the past 12 months participants had committed minor offences, such as shoplifting, petty theft, and unarmed fights, commonly measured in the literature. Response categories ranged from 1 = *never in the past 12 months* to 4 = *4 times or more in the past 12 months*. The total number of offences was used as a scale with high internal consistency (Cronbach's $\alpha = .84$). Previous studies using factor analyses showed that the scale is one-dimensional (see Houtzager & Baerveldt, 1999). Furthermore, they showed that the test-retest reliability of the scale over a 1-year period is high, namely $r = .55$ for girls and $r = .63$ for boys in a sample of 1528 adolescents.

Second, we assessed aggressive behaviour by means of a subscale from the Dutch version of the Youth Self-Report (Achenbach, 1991; Verhulst, Van der Ende, & Koot, 1996). The subscale consists of 8 items tapping explicit aggressive behaviour over the last 6 months. Item examples are "I fight a lot" or "I destroy other people's things". Participants rated the items on a 3-point scale, ranging from 0 = does not apply to me at all, 1 = sometimes applies to me, 2 = often applies to me. The internal consistency of the scale in our study was $\alpha = .68$.

Emotional problems. To assess emotional problems, we used three indicators. First, we used Kandel and Davies' (1982) 6-item Kandel Depression Scale to assess depressive mood. Participants rated the frequency (0 = *never*; 4 = *always*) with which they experienced symptoms of depressive mood such as feeling nervous and tense (Cronbach's $\alpha = .77$). Their responses were averaged to yield a depressive mood score; higher values indicated more frequent feelings of depression.

A short form of the Perceived Stress Scale (Cohen, Kamarck, & Mermelstein, 1983) was employed to measure the degree to which the respondent perceived his or her life to be unpredictable, uncontrollable, or overloaded. The 11 items were rated on a 5-point scale ranging from "never" to "very often". Higher scores were associated with increased levels of stress. Internal consistency was .80.

Finally, Rosenberg's (1965) self-esteem scale assessed

adolescents' perceived self-value or sense of worth (e.g., "Sometimes I feel that I am completely useless", "In general I am happy with myself"); (10 items). The self-esteem scale is widely used and is commonly found to have high reliability and internal consistency, and to represent a unidimensional construct (e.g., Gray-Little, Williams, & Hancock, 1997). Also, it is often taken as an indicator of psychosocial adjustment among adolescents (Kahle, Kulka, & Klingel, 1980). Responses were given on a 4-point scale ranging from 1 = *very descriptive of me* to 4 = *not at all descriptive of me*. The internal consistency was .78.

Strategies for analyses

First, descriptive analyses (raw means and *SDs*) were conducted. Second, to test whether self-control mediates the relationship between parenting and behavioural and emotional problems, we followed the procedures of Baron and Kenny (1986) for testing mediating links. In a first step, multiple regression analyses were used to examine the direct relations between parenting, self-control, and emotional and behavioural problems. In a second step, we examined whether the direct effects of parenting diminished or disappeared when self-control was included in the regression model as a mediating variable. Hierarchical multiple regression analyses were employed to test these mediating links. Third, the relation between self-control and emotional problems was examined by looking at curvilinear relationships in regression analyses. Finally, because our predictions concerned gender differences in the associations between parenting, self-control, and problem behaviour, additional analyses were conducted separately for boys and girls.

Results

Descriptive analyses

Table 1 provides findings on the means and standard deviations for the variables in this study. *t*-tests were conducted to examine gender differences for all assessed variables. Adolescents in our sample generally reported high levels of

parental acceptance and knowledge. They perceived their parents as emotionally supportive and involved and aware of their child's whereabouts and activities. Gender differences were apparent for strict control and psychological control: Boys reported lower levels of strict control but higher levels of psychological control than girls. With respect to self-control, moderate levels of self-control were reported by the young adolescents in our sample (mean of 3.53 on a 5-point scale). No gender differences were found.

Given the age of our sample, it is not surprising that the prevalence of delinquency was relatively low. Despite the low mean on the delinquency scale, the expected gender difference for delinquency emerged: Female adolescents engaged in delinquent activities less often than their male counterparts. With respect to self-reported aggression, moderate levels of aggression emerged. All adolescents reported engaging in direct aggressive behaviour at times. Also, in line with existing findings in the literature, boys reported higher levels of aggression than girls. With respect to emotional problems, again, well-established gender differences emerged. Girls reported higher levels of depressive mood and lower levels of self-esteem compared to boys. A marginal effect for perceived stress indicated that girls tended to report more stress than boys.

With respect to the univariate links between parenting behaviours and adolescents' self-reported emotional and behavioural problems, our results are consistent with existing findings (see Table 2 for details). All parenting variables were interrelated, suggesting that adolescents who perceive their parents as high in acceptance also perceive their parents to be high on strict control but low on psychological control. Moreover, replicating earlier findings, high acceptance and strict control, on the one hand, and low psychological control, on the other hand, were associated with lower levels of emotional and behavioural problems. A similar pattern of correlations emerged for self-control. Adolescents who reported high levels of self-control also reported lower levels of emotional and behavioural problems. Finally, in our study emotional and behavioural problems appeared to be related, with adolescents reporting higher levels of emotional problems also reporting higher levels of behavioural problems, and vice versa.

Table 1

Raw means and standard deviations for parenting, self-control, and adolescent behavioural and emotional problems by gender

	Boys		Girls		<i>t</i> -value	<i>p</i>
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>		
Parenting variables						
Acceptance	4.04	0.55	4.05	0.56	0.52	n.s.
Psychological control	2.36	0.60	2.17	0.53	4.13	.000
Strict control	3.85	0.68	4.00	0.65	6.02	.000
Self-control	3.53	0.65	3.54	0.64	0.98	n.s.
Behavioural problems						
Delinquency	1.28	0.39	1.08	0.20	11.22	.000
Aggression	1.31	0.29	1.20	0.22	7.53	.000
Emotional problems						
Depressive mood	2.24	0.65	2.36	0.68	3.04	.002
Stress	2.21	0.54	2.27	0.57	1.90	.057
Self-esteem	3.21	0.46	3.07	0.52	5.34	.000

Table 2*Pearson correlations between parenting, adolescent behavioural and emotional problems, and self-control*

	Parenting			Behavioural problems		Emotional problems		
	1	2	3	4	5	6	7	8
Parenting variables								
1. Acceptance								
2. Psychological control	-.23**							
3. Strict control	.32**	.09**						
Behavioural problems								
4. Delinquency	-.12**	.19**	-.29**					
5. Aggression	-.19**	.25**	-.13	.40**				
Emotional problems								
6. Depressive mood	-.20**	.21**	-.04	.14**	.25**			
7. Stress	-.29**	.28**	-.10**	.18**	.22**	.64**		
8. Self-esteem	.28**	-.21**	.11**	-.08**	-.16**	-.48**	-.57**	
Self-control	.17**	-.22**	.05	-.19**	-.35**	-.45**	-.42**	.37**

* $p < .05$; ** $p < .01$.*Parenting, psychosocial problems, and self-control*

Test of direct relations. Is parenting behaviour directly associated with emotional and behavioural problems? Because the parenting variables were interrelated (see Table 2), we conducted multiple regression analyses to examine the links between all perceived parenting behaviours, behavioural and emotional problems, and self-control (see Table 3).

Consistent with the existing literature, parenting behaviour showed some direct links to behavioural problems. Although parental acceptance was unrelated to delinquency, psychological control was positively associated with delinquency, and parental strict control was negatively related to delinquency (R^2 of the total sample = .13). Thus, more delinquent young adolescents perceived their parents as being more likely to exert psychological, restrictive control and less likely to be knowledgeable about their offspring's activities and whereabouts. Converging evidence was obtained with the measures of aggression: Psychological control was positively associated with aggressive behaviour, while parental strict control was negatively associated with aggressive behaviour. Additionally, parental acceptance showed a negative relation with aggressive behaviour, indicating that adolescents with highly supportive parents were less aggressive. Parenting behaviours explained 9% of the variance in aggression.

Also consistent with previous findings, parenting was negatively associated with emotional problems. Perceived parental acceptance was negatively associated with depressive mood, while psychological control was positively associated with depressive mood ($R^2 = .07$). Parental strict control was unrelated to depressive mood. This pattern of results also emerged for stress, the only difference being that the observed relations were much stronger (see Table 3) and explained about twice as much variance ($R^2 = .13$). For self-esteem, the pattern was reversed, in that parental acceptance showed a positive association with self-esteem, while psychological control showed a negative association. Parental strict control did not emerge as a first-order predictor for self-esteem. The parenting variables explained 10% of the variance in self-esteem for boys and girls.

High levels of acceptance and low levels of psychological control were multivariately related to self-control. Parental strict control did not contribute to the explained variance in self-control. Overall, perceived parenting explained 8% of the variance in self-control.

Mediation by self-control. To test whether self-control operates as a mediator between parenting and behavioural and emotional problems in early adolescence, multiple hierarchical

Table 3*Multivariate regression analyses predicting self-control and adolescent behavioural and emotional problems*

	Acceptance			Psychological control			Strict control			R^2		
	Total sample	Boys	Girls	Total sample	Boys	Girls	Total sample	Boys	Girls	Total sample	Boys	Girls
Behavioural problems												
Delinquency	.03	.04	-.06	.23**	.22**	.11**	-.32**	-.33**	-.28**	.13**	.13**	.10**
Aggression	-.10**	-.11**	-.12**	.24**	.19**	.23**	-.12**	-.10*	-.09*	.09**	.07**	.09**
Emotional problems												
Depressive mood	-.16**	-.14**	-.16**	.17**	.23**	.15**	-.01	-.01	-.04	.07**	.09**	.06**
Stress	-.21**	-.22**	-.19**	.24**	.28**	.23**	-.05*	-.05	-.10*	.13**	.15**	.13**
Self-esteem	.22**	.22**	.19**	-.17**	-.21**	-.20**	.05	.05	.11**	.10**	.12**	.12**
Self-control	.12**	.12**	.11*	-.19**	-.22**	-.17**	.03	.01	.10*	.06**	.07**	.06**

Standardised parameters of the equation.

* $p < .05$; ** $p < .01$.

regression analyses were conducted. According to Baron and Kenny (1986), evidence of mediation requires that (1) the predictor variable (here all three parenting variables are considered as predictors) is related to the criterion variable (delinquency, aggression, depressive mood, stress, and self-esteem, respectively) (see Table 3), (2) that the predictor variable is related to the hypothesised mediator (i.e., self-control) (see Table 3), (3) that the hypothesised mediator is correlated with the criterion variable (see Table 2), and (4) that the predictor no longer affects the criterion variable after the hypothesised mediator has been controlled (i.e., complete mediation) or that the link between predictor and criterion is reduced in absolute size (i.e., partial mediation).

Because parental strict control was unrelated to self-control, it does not fulfil the conditions for mediational analysis (criterion 2). Consequently, no mediational analyses will be reported for this variable. Only its direct link with emotional and behavioural problems above and beyond the effects of the other parenting variables and self-control will be reported.

As can be seen in Table 4, parental acceptance was unrelated to delinquency (Steps 1 and 2) and thereby did not fulfil the first criterion for mediation. Psychological control contributed positively to delinquency. While it remained significant after controlling for self-control, the reduction was significant, $Z = 5.75, p < .01$ (for details on the Sobel test see Baron & Kenny, 1986; MacKinnon, Warsi, & Dwyer, 1995; Sobel, 1982), indicating that self-control partially mediated the link between psychological control and delinquency. Parental strict control was negatively related to delinquency, above and beyond self-control, which was negatively related to delinquency. Thus, both self-control and parenting control are directly associated with adolescents' self-reported engagement in minor delinquency. A partial mediation emerged for the link between psychological control and delinquency.

All betas for the suitable parenting variables as first-order predictors for aggression decreased when self-control was entered in Step 2. This reduction was significant for parental acceptance, $Z = 2.16, p < .05$, and psychological control, $Z = 4.87, p < .01$, indicating that self-control partially mediated the influence of parenting variables on aggression. The addition of self-control increased the predicted variance in aggression from $R^2 = .09$ to $.17, Fchange(1, 1213) = 118.73, p < .01$, an increase of 8%. Despite the decrease in betas, parental acceptance and strict control continued to contribute negatively to aggression and psychological control positively

when self-control was controlled for. Thus, while self-control partially mediated the influence of parenting on aggression, both parenting variables and self-control also directly contributed to explaining variance in aggression.

Paralleling the results for aggression, the influence of acceptance and psychological control decreased ($Z = 3.15, p < .01$ and $Z = 3.25, p < .01$, respectively) when self-control was entered in the regression to predict depressive mood. Parental acceptance was negatively related to depressive mood while psychological control was positively related to depressive mood (Steps 1 and 2). Parental strict control did not contribute to explaining variance in depressive mood. The addition of self-control increased the predicted variance in depressive mood from $R^2 = .07$ to $.23, Fchange(1, 1202) = 244.68, p < .01$, a threefold increase of 16%. Again, the relation between parenting variables and depressive mood was thus partially mediated by self-control, but parental acceptance and psychological control and self-control independently contributed to explaining variance in depressive mood.

The analyses yielded a comparable pattern for the relations between parenting and stress and self-esteem. In both cases, betas for parental acceptance and psychological control decreased significantly when self-control was entered in the equation ($Z = 4.77, p < .01$ and $Z = 5.27, p < .01$ for stress and $Z = 4.52, p < .01$ and $Z = 3.36, p < .01$ for self-esteem). For stress, the addition of self-control increased the predicted variance in stress from $R^2 = .13$ to $.26, Fchange(1, 1211) = 182.70, p < .01$, an increase of 11%. Parental strict control was not related to stress among young adolescents. Parental acceptance was negatively related to stress and psychological control was positively related to stress, indicating that adolescents who reported having highly supportive parents reported less stress, while adolescents who perceived their parents to exert psychological, restrictive control reported more stress. Again, despite the partial mediational effect of self-control, both parenting variables and self-control independently contributed to explaining variance in stress.

For self-esteem, the same pattern of results emerged. Adding self-control increased the predicted variance in self-esteem from $R^2 = .10$ to $.21, Fchange(1, 1212) = 136.89, p < .01$, an increase of 9%. Parental strict control was not related to self-esteem when self-control was entered in Step 2. Parental acceptance was positively related to self-esteem and psychological control was negatively related to self-esteem, indicating that adolescents who reported having highly supportive parents

Table 4
Hierarchical regression predicting behavioural and emotional problems

	<i>Delinquency</i>		<i>Aggression</i>		<i>Depressive mood</i>		<i>Stress</i>		<i>Self-esteem</i>	
	<i>Beta</i>	<i>R</i> ²	<i>Beta</i>	<i>R</i> ²	<i>Beta</i>	<i>R</i> ²	<i>Beta</i>	<i>R</i> ²	<i>Beta</i>	<i>R</i> ²
Step 1										
Acceptance	.03		-.11**		-.16**		-.21**		.20**	
Psychological control	.23**		.23**		.18**		.24**		-.17**	
Strict control	-.32**	.14**	-.11**	.09**	.02	.07**	-.07*	.13**	.06*	.10**
Step 2										
Acceptance	.05		-.08**		-.11**		-.17**		.17**	
Psychological control	.20**		.17**		.10**		.17**		-.11**	
Strict control	-.32**		-.10**		.00		-.05		.05	
Self-control	-.14**	.15**	-.29**	.17**	-.41**	.23**	-.35**	.25**	.31**	.19**

Standardised parameters of the equation.

* $p < .05$; ** $p < .01$.

had high self-esteem, while adolescents who perceived their parents to exert psychological, restrictive control had low self-esteem. Similar to the effects found for stress then, despite the partial mediation of self-control, both parenting variables and self-control also independently contributed to explaining variance in stress.

Taken together, the findings of the mediational analyses showed that parenting behaviours (in particular high parental acceptance and low psychological, restrictive control) and self-control consistently and independently contributed to the prediction of all behavioural and emotional problems (Table 4). The effects of self-control were all very strong, and except for delinquency, much stronger than those of the assessed parenting variables. Additionally, self-control appeared to play a mediational role in the relations between parenting variables and behavioural and emotional problems.

How is self-control related to psychosocial adjustment?

The literature offers two competing hypotheses concerning the relation between self-control and emotional and behavioural problems in adolescence. Both models concur on the fact that low self-control should be related to more problem behaviour, but they disagree whether high self-control is related to fewer problems (Baumeister et al., 1994) or to more problems, in particular to more emotional problems (Kremen & Block, 1998). The former model predicts a linear relation between self-control and both emotional and behavioural problems, while the latter predicts a curvilinear relation between self-control and, especially, emotional problems.

As can be seen in Table 2, all univariate correlations between self-control and psychosocial problems are significant, ranging from $-.19$ for delinquency to $-.46$ for depressive mood and stress. These findings seem to support the view that low levels of self-control are related to higher levels of emotional and behavioural problems in adolescence. Thus, contrary to the curvilinear model, poor self-control, rather than high self-control, appears to be a risk factor for emotional problems.

To test the competing predictions more rigorously, we conducted regression analyses on measures of behavioural and emotional problems and self-control, examining whether curvilinear regression models accounted for more variance than linear ones. They did not. For all analyses, only the linear regression model significantly explained the observed variance between measures of behavioural problems and self-control, on the one hand, and measures of emotional problems and self-control, on the other. Additionally, we observed no significant change in R^2 when squared terms were entered following each of the behavioural and emotional problems. These changes would detect any signs of curvilinearity in the data beyond the basic linear effects reported above. In short, we found no evidence of curvilinear effects of self-control.

Self-control, problems, and gender differences (and similarities)

Next, we turn to the hypotheses about possible gender differences in the links between self-control and problems. Substantial correlations between self-control and behavioural problems were found for both boys, $r(606) = -.22, p < .001$ for delinquency and $r(623) = -.36, p < .001$ for aggression,

and girls, $r(582) = -.19, p < .001$ for delinquency and $r(596) = -.36, p < .001$ for aggression. These findings indicate that low levels of self-control in adolescent boys and girls were related to high levels of delinquency. They fit the view that poor self-control is a risk factor for behavioural problems in both sexes.

The more ambitious hypothesis was that high levels of self-control would be associated with emotional problems among girls (or perhaps everyone). However, we found that low levels, rather than high levels, of self-control are a risk factor for emotional problems (see Table 3). Again, the observed correlations were considerable and held for boys and girls: low levels of self-control were associated with more depressive mood, $r(614) = -.47, p < .01$ and $r(593) = -.45, p < .01$, more stress, $r(620) = -.42, p < .01$ and $r(596) = -.45, p < .01$, and lower self-esteem for both adolescent boys and girls, $r(620) = .40, p < .01$ and $r(597) = .40, p < .01$.

To explore gender differences further, we conducted all analyses described above separately for boys and girls. Overall, the results for both boys and girls were similar to those found for the entire sample. All found results held in both samples. Associations and effects varied in strength but never in direction.

Discussion

The present results can be summarised as follows. Self-control and some aspects of perceived parenting independently predicted emotional and behavioural problems in a sample of early adolescents. Low levels of self-reported self-control were strongly related to both behavioural and emotional problems for early adolescent boys and girls. Viewing one's parents as restrictive and psychologically controlling was associated with more behavioural problems (delinquency and aggression) and more emotional problems (depression, stress, and low self-esteem). Viewing parents as accepting and supportive was linked with fewer emotional problems. Viewing them as generally strict and knowing about their offspring's activities and whereabouts was associated with fewer behavioural problems.

Further, our results suggest that the link between parenting behaviour and psychosocial problems in early adolescence is partly mediated by self-control, although parenting behaviour contributes independently and directly to adolescent problems above and beyond this mediation. Likewise, self-control contributes to adolescent problems in ways that are independent of the parenting variables we measured.

Last, we found little support for the more elaborate hypotheses regarding curvilinear relationships and gender differences. Low self-control was worse than high self-control for both girls and boys and for both emotional and behavioural problems. The relation between self-control and psychosocial problems in adolescence appeared to be linear rather than curvilinear.

Parenting behaviour and adolescent problems

We undertook this research to understand the relationship between parenting behaviours and adolescent problems. In the present study, young adolescents with low levels of problems (both emotional and behavioural) perceived their parents to be emotionally supportive and low in psychological control. These

findings are consistent with a large variety of studies showing that adolescents who grow up in supportive, nurturing families where parents are emotionally involved, responsive to their children's needs, and interested in their children's lives are less likely to develop problem behaviours than adolescents who grow up in distant, conflictive families where parents are uninvolved, neglectful, or rejecting (e.g., Lamborn et al., 1991).

Psychological control, in our study, was consistently related to higher levels of emotional and behavioural problems. Parents who were perceived as highly restrictive and manipulative had offspring with more problem behaviours. This type of control is different from overt behavioural coercion (e.g., physical punishment) or from strict control. Parents who exert psychological control constrain, invalidate, or manipulate children's psychological and emotional experience and expression (Barber, 1996). They would, for example, avoid their child when he or she does not meet parental expectations or tell their child he or she is not as good as other children. Our findings clearly suggest that parental control can be exerted in different ways, and that the way in which parents exert control is linked to adolescent psychosocial problems. Indeed, while strict control was found to be negatively related to emotional and behavioural problems, perceived psychological control was positively linked with behavioural and emotional problems. This finding is consistent with studies among young adolescents by Barber, Olsen, and Shagle (1994) and Gray and Steinberg (1999). These authors showed that the exertion of parental control without the provision of emotional autonomy has counterproductive effects on adolescents' problem behaviour. Our findings extend previous findings by showing that psychological control is not only negatively related to problem behaviour but also to adolescents' levels of self-control. Thus, while it may be good for parents to exert some control and keep an eye on their offsprings' whereabouts and activities, the exertion of control may be harmful, especially if parents put psychological pressure on their children and fail to stimulate their feelings of autonomy (Engels, Finkenauer, Meeus, & Dekovic, 2001b).

Parental strict control emerged as a first-order predictor for behavioural problems in both boys and girls but not for emotional problems in boys. It is possible that parental strict control increases as a consequence of adolescents' behavioural problems. That is, in line with the simple assumption that parents would keep an eye on misbehaving children more than on well-behaved ones, parents may increase their monitoring of their overtly misbehaving children's activities and whereabouts (Kerr & Stattin, 2000). Because other people are less inclined to complain about and ask for parental intervention with respect to depressive or distressed children, parental strict control of their children's whereabouts and activities may be less dependent of the level of emotional problems (e.g., Green, Clopton, & Pope, 1996).

The relation between parenting, self-control, and adolescent problems

The first question was whether parenting is directly or indirectly, via the mediating influence of self-control, related to behavioural and emotional problems in early adolescence. Our results yielded evidence for a possible mediation role of self-control. Apparently, parenting variables, in particular

acceptance and psychological control, are related to emotional and behavioural problems directly and independently, as well as indirectly by their association with adolescents' levels of self-control (see also Brody & Ge, 2001; Engels et al., 2001a).

It could be argued that the finding of mediation is more important than the statistical strength of the relationship. Most likely the true mediation is even stronger than we found. Certainly we did not measure all possible parenting patterns and variables that could help shape or undermine self-control in offspring. Indeed, our measures of parenting were limited to current practices as seen through the eyes of the offspring. Other indicators of parental influence should be included in future research. For instance, it is likely that children with high self-control also have parents who exert high self-control (e.g., are never late, can resist temptations, are good at handling their emotions and can express them adequately). Nevertheless, our results suggest that parental acceptance seems to strengthen young adolescents' self-control, whereas psychological control seems to weaken children's self-control. Future research needs to identify which aspects of these parenting variables affect self-control in young adolescents. Also, it seems likely that parental practices earlier in the offspring's life may have shaped self-control. It is also possible that some parental actions and efforts did not show up in our measures of how their offspring rated them. The fact that there was any significant mediation at all can be construed as a positive indication that teaching (or otherwise instilling) self-control is an effective way for parents to help their offspring to avoid problems during adolescence.

Self-control and adolescent problem behaviour

The second and third question concerned the role of self-control in adolescent problem behaviour. In line with our predictions, low levels of self-control were associated with more behavioural problems among boys and girls (Baumeister et al., 1994; Kremen & Block, 1998). However, contrary to our predictions, not high self-control but low self-control was associated with greater emotional problems. Also contrary to the prediction, this finding held for both sexes. Thus we failed to find detrimental effects of high self-control. Although one could argue that this lack of findings may be due to the use of different measures, the absence of detrimental effects of high self-control has been established in other studies using the same measure in large samples of young adults (Tangney et al., 2004) and personality measures of self-control (Dubas, Gerris, Janssens, & Vermulst, 2002). Given the consistency of our findings with existing studies, even those using teacher's ratings (Brody & Ge, 2001), our study is the first to show that using self-reports of self-control among young adolescents is practical and useful.

Furthermore, our findings did not yield support for the hypothesis that self-control would show a curvilinear relation with problem behaviour in adolescence (Kremen & Block, 1998). Instead, the benefits of self-control appeared to be linear, such that the higher the individual scored on self-control, the fewer problems he or she reported. The idea that overcontrol can have detrimental effects was also tested by Tangney et al. (2004) in their original report of their scale and failed to find any support. The present results cannot fully rule out the hypothesis that extreme levels of high self-control may be detrimental to adolescent psychosocial adjustment, because adolescents reporting such extreme overcontrol were scarce in

the present sample. However, given that Kremen and Block (1998) asserted that overcontrol would be associated with depressive symptoms, especially among girls, and given that girls in our sample showed the to-be-expected higher levels of depression, such an explanation is not very plausible.

Taken together, our findings depict self-control as a seemingly unmixed blessing for adolescents. A low level of self-control appears to be an important risk factor not only for behavioural problems (e.g., Feldman & Weinberger, 1994; Gottfredson & Hirschi, 1990; Moffitt, 1993), but also for emotional problems (Brody & Ge, 2001). This pattern of results seems to suggest that a lack of self-control makes adolescents vulnerable to psychosocial problems in general, rather than increasing the risk for the development of a specific type of psychosocial problem. There was no evidence that high levels of self-control contribute to any of the problems we measured.

Shortcomings of the present study

A note of caution in interpreting our findings is warranted. Although our findings may indicate that certain types of parenting cause adolescents to develop problems, and our hypotheses reflect such an assumption, they are inadequate to rule out alternative interpretations. The findings are based on adolescents' perceptions of their parents and are correlational. They indicate that adolescents who report not experiencing problems also tend to describe their parents as emotionally involved and supportive. In contrast, adolescents who report experiencing problems also tend to describe their parents as psychologically controlling. Given the cross-sectional nature of our study, these findings can be interpreted both ways: Problem behaviour in adolescence may decrease parental acceptance and increase psychological control, or low levels of parental acceptance and high levels of psychological control may lead to behavioural problems (see also Engels et al., 2001b). Only longitudinal data, in which cross-lagged paths between parenting and problem behaviour are examined, may provide more insight into this problem of causality and help to tease apart competing causal hypotheses. Also, longitudinal data would allow a better test of the mediational role of self-control in the link between parenting and psychosocial problems in adolescence.

The correlational design of our study also prevents us from excluding the influence of third variables on the observed links between adaptive parenting and self-control, on the one hand, and emotional and behaviour problems and self-control, on the other. As a consequence, we cannot rule out the possibility that the observed links are spurious. Different variables that are likely to influence levels of self-control in adolescents were not assessed in the present study and could not be controlled for. Future research needs to take them into consideration and examine their influence. First, parents' socioeconomic status (SES) may influence their parenting and levels of self-control in the family. SES is positively associated with levels of self-regulation (Eisenberg et al., 2003). However, we do not expect SES to cause differences in the pattern of findings. Evidence suggests that relations among socialisation, children's regulation, and children's social functioning in lower SES or minority samples are similar to those found in higher SES or majority samples (Smith & Walden, 2001). Second, adolescents' peers may influence levels of self-control. On the one hand, negative peer pressure may lead adolescents to abandon self-control.

Adolescents who report more pressure to engage in misconduct also report more behavioural problems such as substance abuse and delinquent behaviour (Brown, Clasen, & Eicher, 1986). On the other hand, positive peer pressure may lead adolescents to exert greater self-control. Adolescents often feel that their friends are likely to pressure them to refrain from using drugs or not to engage in sexual activities (Steinberg, 1996). Also, peers may foster values that are associated with high levels of self-control, including hard work and academic achievement (Santrock, 2001). Additional research is needed to draw firm conclusions about the influence of peer pressure and adolescents' self-control. Finally, future research is needed to examine genetic influences on self-control. Genetic influences on personality are well established (e.g., Bouchard & Loehlin, 2001) and will probably be active in self-control as well.

The data in the present study all consisted of adolescents' self-reports, including their reports on how their parents treat them. We assume there is some resemblance between the adolescents' perceptions and actual parental behaviour, but undoubtedly there are some discrepancies, and the extent of these is unknown. Although it would be nice to have both parents and adolescents in the same study, one cannot conclude that parents are more accurate reporters than their children. On the contrary, some findings suggest that parental reports on their own behaviour may be even more biased than children's reports (Cook & Goldstein, 1993). The second reason why adolescents' self-reports may be preferable to other sources of information concerns the importance of subjective experience. The most psychologically consequential reality for adolescents is the version they construct for themselves (see Engels et al., 2001b; Stice & Barrera, 1995; Webb, Bray, Getz, & Adams, 2002).

Concluding remarks

We began with the widespread parental desire to raise well-behaved, well-adjusted offspring. Our study focused on early adolescence, which is often recognised as a time when many psychosocial problems appear (e.g., Wenar & Kerig, 2000). Our findings suggest that parenting behaviours (at least as it is subjectively appreciated by the offspring) has both direct and indirect relationships with these problems. Adolescents had fewer problems if they perceived their parents as providing support in the form of acceptance and involvement in the offspring's life, and as monitoring and maintaining ongoing knowledge about the offspring's activities and whereabouts. In contrast, adolescents had more problems to the extent that they perceived their parents as exerting control in a manipulative and restrictive way. Moreover, adolescent boys and girls with high self-control had fewer problems, and self-control was to some extent a link in the chain between parenting behaviours and adolescent problems. Taken together, these findings provide preliminary support for the suggestion that adaptive parenting behaviour (high parental acceptance, strict control and monitoring, and little use of manipulative psychological control) may help in moulding children's capacities to inhibit antisocial and destructive impulses and adjust to social norms to live happy and healthy lives.

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