



HAL
open science

Fathers' parenting, adverse life events, and adolescents' emotional and eating disorder symptoms: the role of emotion regulation

Ciara Mcewen, Eirini Flouri

► To cite this version:

Ciara Mcewen, Eirini Flouri. Fathers' parenting, adverse life events, and adolescents' emotional and eating disorder symptoms: the role of emotion regulation. *European Child and Adolescent Psychiatry*, 2008, 18 (4), pp.206-216. <10.1007/s00787-008-0719-3>. <hal-00478073>

HAL Id: hal-00478073

<https://hal.science/hal-00478073v1>

Submitted on 30 Apr 2010

HAL is a multi-disciplinary open access archive for the deposit and dissemination of scientific research documents, whether they are published or not. The documents may come from teaching and research institutions in France or abroad, or from public or private research centers.

L'archive ouverte pluridisciplinaire **HAL**, est destinée au dépôt et à la diffusion de documents scientifiques de niveau recherche, publiés ou non, émanant des établissements d'enseignement et de recherche français ou étrangers, des laboratoires publics ou privés.



HAL Authorization

Ciara McEwen
Eirini Flouri

Fathers' parenting, adverse life events, and adolescents' emotional and eating disorder symptoms: the role of emotion regulation

Received: 2 April 2008
Accepted: 15 July 2008
Published online: 22 September 2008

■ **Abstract** *Purpose* To investigate the role of emotion regulation in the relation between fathers' parenting (specifically warmth, behavioral control and psychological control) and adolescents' emotional and eating disorder symptoms, after adjustment for controls. *Methods* A total of 203 11–18 year-old students from a school in a socio-economically disadvantaged area in North-East London completed questionnaires assessing emotional symptoms (measured with the Strengths and Difficulties Questionnaire's (SDQ) Emotional Symptoms Scale), eating disorder symptoms (measured with the Eating Attitudes Test (EAT-26)), difficulties in emotion regulation (measured with the Difficulties in Emotion Regulation Scale (DERS)), and fathers' over-protection and warmth, measured with the Parental Bonding Instrument (PBI), as well as behavioral and psychological control. The confounding variables considered were number of proximal (i.e., during the last year) adverse life events experienced, gender, age, and socio-economic status (eligibility for free school meals). *Results* Adolescents' difficulties in emotion regulation mediated the link between fathers' psychological control and adolescents' emo-

tional symptoms, but not the link between fathers' parenting and adolescents' eating disorder symptoms, which appeared to be more directly linked to fathers' psychological control and number of proximal adverse life events experienced. Proximal adverse life events experienced were also strongly associated with difficulties in emotion regulation. *Conclusions* The study findings have implications for intervention programs which may prove more fruitful in addressing adolescent emotional problems by targeting underlying emotion regulation abilities, and in addressing adolescent eating disorder symptoms by protecting adolescents with a recent experience of multiple adverse life events. Parenting programs also stand to benefit from the evidence presented in this study that paternal psychological control may have uniquely harmful consequences for adolescent development through the hampering or atrophying of emotion regulation abilities and the encouragement of eating disorders.

■ **Key words** adverse life events – eating disorders – fathers' parenting – internalizing behavior

C. McEwen · Dr. E. Flouri (✉)
Dept. of Psychology and Human
Development
Institute of Education
University of London
25 Woburn Square
London WC1H 0AA, UK
E-Mail: e.flouri@ioe.ac.uk

Introduction

Some 40 years of empirical parenting research have produced consensus on the primacy of three parenting dimensions -behavioral control (including monitoring, supervision, and discipline), warmth (including support, involvement, and attachment) and psychological control - and their contribution to children's internalizing problems [44, 46], for a discussion). Behavioral control, involving overt strategies, rules and restrictions to delineate boundaries and manage children's behavior, is considered a positive aspect of parenting when pitched at the right level and in the right context [31], and it has been associated with low levels of depression and with positive emotional adjustment in children [4, 49]. The same is true of high levels of warmth [4, 45]. Conversely, high levels of psychological control have been specifically correlated with internalizing problems in both children [3] and adolescents [67, 74]. This style is considered characteristic of parents who are intrusive and overprotective, and who create a sense of dependency in children by constraining, invalidating, and manipulating children psychologically and emotionally [2], for a review). Examples of psychological control might include repeatedly mentioning the child's past mistakes or stopping talking to the child when he or she does something displeasing. Behavioral and psychological control have differential effects on different areas of child development, with behavioral control more relevant to externalizing problems -because it provides children with clear guidance for appropriate social behavior and conduct -and psychological control more relevant to internalizing problems - because of its interference with children's security and self-identity [3], particularly when combined with high levels of behavioral control [12].

Often conceptualized as a subtype of internalizing behavior, eating disorders—a term which covers a diverse range of complex problems relating to food - frequently appear during adolescence. There is strong evidence for comorbidity between emotional and eating disorder symptoms [80, for a review), and findings from behavioral genetic studies suggest that there is a shared genetic vulnerability [72]. One corollary of this evidence for comorbidity is that some studies have attributed perceptions of maladaptive parenting among eating disordered persons to the corresponding high rate of depression and depressed mood within this group. For example, Wonderlich and Swift [87] showed that when levels of mood disturbance were controlled no significant differences in parental ratings were observed between eating disordered subjects and normal controls. At any rate, studies that have modeled links between parenting

and eating disorders [57], for a review) find evidence for specificity both in parenting dimensions and in eating disorders, with low levels of maternal nurturance being associated with bulimia nervosa [83], with affectionless and overcontrolling parenting being associated with anorexia [57], for a discussion), and with behavioral control buffering the effect of adolescent concerns about weight [29]. These important findings notwithstanding, no study has yet modeled the specific effect of fathers' parenting on children's eating disorder symptoms.

This is unfortunate as the last decades' growing concern and interest in the role that fathers play in the lives of their children [11, 68, 76] for reviews) has resulted in a plethora of good studies testing links between fathers' and children's behaviors. As with studies on maternal parenting and child psychopathology, studies on paternal parenting and child psychopathology have moved away from modeling direct effects towards testing possible mechanisms of influence, usually by modeling mediator effects. Following some important reviews in 2000 (e.g., [10, 55]) recent studies testing mediation models are also usefully looking for specificity both in child adjustment, indicating whether, for instance, the impact of fathering on children's psychological adjustment is diagnostically specific or non-specific, and in fathering [5, 16, 24, 31, 52, 64, 76]. For example, we now know that although paternal support is inversely related to internalizing behavior problems in children [6], in limiting externalizing behavior problems paternal behavioral control rather than support is most effective [31].

The role of emotion regulation

Whilst acknowledging the effect of parenting on children's psychosocial development, researchers are increasingly drawing attention to the possibility that much of this effect occurs via children's emotion regulation (e.g., [18, 59]). Emotion regulation is not a new concept, although the literature is replete with inconsistent definitions. One of the more commonly cited definitions is that it constitutes, "...[the] processes responsible for monitoring, evaluating, and modifying emotional reactions...[in order] to accomplish one's goals" [77], p. 27). Individual differences in emotion regulation have been attributed to both children's temperament traits [28], for a review) and mothers' parenting [17, 20, 23, 30, 53, 59], and there is also evidence for an interaction between the two. Feng et al. [28], for instance, showed that positive parenting may serve as a protective factor in the development of maladaptive emotion regulation

strategies amongst temperamentally inhibited children.

Also extensively researched is the relation between emotion regulation deficits and atypical development such as internalizing and externalizing problems [19, 23, 48, 75]. With respect to internalizing problems in particular, emotion regulation difficulties have been linked to both clinical disorders, such as generalized anxiety disorder and social anxiety disorder [58, 82], and non-clinical emotional problems [36], as well as bulimia [26] and anorexia nervosa [34, 54]. However, and despite these developments in evidence, no study has yet tested if fathers' parenting is associated with adolescent emotion regulation, and if adolescent emotion regulation mediates the relation between fathers' parenting and adolescent internalizing problems. The present study was carried out to test this.

The present study

The aim of the present study was, therefore, to test if fathers' parenting (i.e., warmth, behavioral control, and psychological control) is linked to adolescents' internalizing problems (i.e., emotional and eating disorder symptoms) via its impact on adolescents' emotion regulation, after controlling for confounding factors. The study adjusted for the effect of the confounding variables of age, gender, socio-economic status (SES) and proximal (i.e., in the past 12 months) adverse life events, in view of the evidence for the association of these factors with the study's main variables. For example, adverse life events have been associated both with depression and anxiety [7, 13, 14, 78], and with eating disorder symptoms and problems with diet and body shape [50]. On the other hand, gender, age, and SES have been found to both predict the study's main variables and moderate some of the relations between the study variables. For example, the relation of parenting to children's outcomes often varies with the gender of the child [8], and emotion regulation abilities change with age [62], and may change with SES [22].

Methods

■ Participants and procedure

Data from 203 children aged between 11 and 18 were used. The children were from a comprehensive, co-educational secondary school in a lower socio-economic neighborhood in North-East London. A total of 271 children participated but 68 of them failed to complete their questionnaires and were excluded from the analyses. The final sample consisted of

38.4% boys and 61.6% girls. In all, 7.9% reported being on an Individual Education Plan. Approximately 60% of children lived with both natural parents. When asked to state who they thought of as 'dad' 90.6% of the children referred to their natural fathers. In all, 18.6% of fathers and 43.1% of mothers did not have a current job, and 101 (50%) of the children had been eligible for free school meals at some point during their school years. The children's ethnic backgrounds were diverse. Of the 203 children 102 were white, 51 black, 24 'Other', 15 'Mixed', and 11 'Asian'. The mean age of the children was 14.04 (SD = 1.91) years.

The study was approved by the Departmental Ethics Committee. The school acted in loco parentis in this study, and parents were allowed to opt out their child from the study. Data were collected by a multi-instrument questionnaire, administered to the children during regular school hours with a minimum of one teacher and one research assistant present to ensure that children were completing the questionnaire fully and independently and that confidentiality was respected, and to offer assistance or clarification if required. Children were also told that they could opt out of the study at any point, were reassured that the questionnaires were anonymous and confidential, and were informed of the process of the questionnaire administration.

■ Measures

Fathers' parenting

This was measured with two instruments: (1) the Parental Bonding Instrument (PBI; [65]); and (2) four subscales from Shek's [73] Parental Control Scales. The PBI is a reliable and valid measure of perceived parenting over extended time periods [85]. Two scales, termed 'care' and 'overprotection' or 'control', measure fundamental parental styles as perceived by the child. The measure is retrospective as participants complete it for how they remember their parents during their childhood, and it is to be completed for both mothers and fathers separately. Care (tapping into affection and warmth) is measured with 12 items such as 'My father speaks to me in a warm and friendly voice', and overprotection is measured with 13 items such as 'My father tries to control everything I do'. Although studies exploring links between parenting in general and children's psychological adjustment should be cautious about establishing directionality, cross-sectional analysis of cross-twin intertrait correlations has shown that direction of causality modeling between latent constructs of parenting using the PBI and psychological distress

revealed that a model which specified recollected parental behavior as the cause of psychological distress provided a better fit than a model which specified psychological distress as the cause of recollected parental behavior [35]. In general, the evidence seems to suggest that low care and overprotection are related to the onset of internalizing and mood and eating disorders (e.g., [66, 71, 84]), and that these associations are in general not moderated by child's gender [69]. Although the overprotection dimension of the PBI is primarily a measure of psychological autonomy granting, some researchers have argued that this is not a pure measure of psychological control and that it also measures elements of behavioral control or 'encouragement of behavioral freedom' [51, 63].

Therefore, in order to assess fathers' behavioral and psychological control appropriately we used additional parenting measures. We used Shek's [73] scales of parental knowledge, parental monitoring, and parental discipline to measure behavioral control, alongside his scale of psychological control. Designed to measure the adequacy of parents' knowledge of their children's behavior, the parental knowledge scale contains seven items, such as "My father clearly knows my situation in school". The parental monitoring scale is comprised of seven items designed to measure the extent of parental surveillance of the child's behavior, such as "My father usually checks my homework", and parental discipline is measured with items such as "When I study hard my father praises me". Finally, the psychological control scale contains ten items measuring both parental manipulation and guilt-inducing control tactics (e.g., "When my father criticizes me he always mentions my past mistakes") as well as withdrawal of affection (e.g., "When my views are different from those of my father he reduces his friendliness to me"). All four scales have shown high internal consistency [73].

Emotion regulation

This was measured with Gratz and Roemer's [43] Difficulties in Emotion Regulation Scale (DERS), a 36-item, self-report questionnaire designed to assess multiple aspects of emotion dysregulation. The DERS yields a total score as well as scores on six subscales: non-acceptance of emotional responses, difficulties engaging in goal-directed behavior, impulse control difficulties, lack of emotional awareness, limited access to emotion regulation strategies, and lack of emotional clarity. The DERS has shown high internal consistency (and adequate internal consistency of subscales), good test-retest reliability over a period of 4–8 weeks, and good construct and predictive validity [42, 43, 81].

Emotional symptoms

These were measured with the Emotional Symptoms Scale of Goodman's [37, 38] Strengths and Difficulties Questionnaire (SDQ). The SDQ is a 25-item behavioral screening questionnaire for children designed to assess four difficulties, i.e., emotional symptoms, conduct problems, hyperactivity and peer problems, and one strength, i.e., prosocial behavior. The SDQ has been extensively evaluated and applied in the UK and abroad (e.g., [47, 61, 86]). Internal consistency [39], test-retest reliability [38], and concurrent and discriminant validity [40, 41] are excellent.

Eating disorder symptoms

These were measured with the Eating Attitudes Test (EAT-26; [32]), the most widely used standardized screening measure of symptoms and concerns characteristic of eating disorders. A score of 20 or more is indicative of the need for further investigation by a qualified professional to determine if the diagnostic criteria for an eating disorder are met. The scale has excellent internal consistency, test-retest reliability [33], and concurrent validity when measured against other measures of dieting behavior [70]. The 26 items form three subscales (i.e., Dieting, Bulimia, and Food Preoccupation and Oral Control).

Confounding variables

As discussed above, in addition to age, gender, and SES which was measured by eligibility for free school meals, the number of proximal adverse life events was also controlled for. Proximal adverse life events were measured with Tiet et al.'s [79] Adverse Life Events Scale. This scale is composed of 25 possible events occurring in the last year which children had little or no control over (e.g., 'someone in the family died', 'someone in the family was arrested', 'negative change in parents' financial situation'), and is a modification of the Life Events Checklist (LEC; [9, 13, 14]) which has acceptable validity and test-retest reliability [9]. The LEC is a measure of exposure to potentially traumatic events developed at the National Center for Posttraumatic Stress Disorder (PTSD) to facilitate the diagnosis of PTSD.

Results

First, correlations between the study variables were examined. As preliminary analyses revealed that score distributions were not normal in the adverse life events, emotional symptoms, eating disorder symptoms, paternal psychological control, and paternal

discipline scales, Spearman's ranks were used. As shown in Table 1, none of the scales tapping into fathers' behavioral control were correlated with eating disorder symptoms, emotional symptoms or difficulties in emotion regulation. The only fathers' parenting variables associated with the two study outcome measures or the mediator variable were overprotection, warmth, and psychological control.

Next, multivariate analyses were carried out to examine if emotion regulation difficulties mediate the relationship between fathers' parenting and adolescents' emotional symptoms (Hypothesis 1), and between fathers' parenting and adolescents' eating disorder symptoms (Hypothesis 2). The results are presented in Tables 2 and 3.

Hypothesis 1

First, it was established if the predictor variables are related to the outcome variable. Following the results of the correlation analysis we controlled only for gender, which was entered in block one of the first regression model predicting emotional symptoms. Block two included the predictor variables of fathers' overprotection, warmth, and psychological control. The statistical assumptions behind linear regression were met: there was no multicollinearity between predictor variables, the assumption of homoscedasticity held, and the residual errors were normally distributed and independent (Durbin-Watson = 2.03). Although, as a whole, fathers' warmth, overprotection, and psychological control had a positive effect on emotional problems, only the effect of psychological control was statistically significant.

To establish if the predictor variables are related to the proposed mediator variable, gender was entered in block one of the second regression equation, and the predictor variables of fathers' overprotection, warmth and psychological control were entered in block two of the model predicting difficulties in emotion regulation. Again, all the statistical assumptions behind linear regression were met (e.g., Durbin-Watson = 1.74). Although warmth had a negative, and overprotection had a positive effect on adolescents' difficulties in emotion regulation, only the effect of psychological control was significant.

Finally, to establish if the proposed mediator is related to the outcome variable, gender was entered in block one of the third regression predicting emotional symptoms. Block two included the predictor variables of fathers' overprotection, warmth, and psychological control, and block three added difficulties in emotion regulation, the proposed mediator. Again, the statistical assumptions behind linear regression were met (e.g., Durbin-Watson = 2.10). In this model the only

Table 1 Correlations between the study measures

	1 Paternal	(a) Warmth	(b) Overprotection	(c) Knowledge	(d) Monitoring	(e) Discipline	(f) Psychological control	2. Difficulties in emotion regulation	3. Emotional symptoms	4. Eating disorder symptoms	5. Adverse life events	6. Female gender	7. Age	8. High SES
1(a)														
1(b)		-0.354**												
1(c)		0.519**	-0.016											
1(d)		0.465**	0.029	0.804**										
1(e)		0.293**	0.139	0.467**	0.561**									
1(f)		-0.407**	0.504**	0.467**	0.561**	0.193**								
2		-0.201**	0.162*	-0.113	-0.001	0.040	0.025**	-0.201*	0.249**	0.248**	0.042	0.108	-0.015	0.059
3		-0.114	0.247**	0.085	0.066	0.042	0.249**	0.162*	0.247**	0.222**	0.382**	0.099	-0.138*	-0.083
4		-0.086	0.270**	0.085	0.138	0.144	0.248**	0.162*	0.268**	0.268**	0.161*	0.326**	0.030	0.039
5		-0.090	0.074	0.042	0.013	0.069	0.042	0.066	0.057	0.268**	0.057	0.188**	0.016	-0.008
6		-0.043	-0.187*	0.038	-0.048	-0.090	0.108	0.066	0.326**	0.268**	0.161*	0.188**	0.016	0.016
7		-0.040	-0.105	-0.166*	-0.225**	-0.090	-0.015	-0.087	0.030	0.268**	0.161*	0.188**	0.016	0.016
8		0.064	0.040	0.075	0.057	-0.226**	0.059	-0.083	0.039	0.268**	0.161*	0.188**	0.016	-0.008

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

Table 2 Results of multiple regression steps 1–4 (emotional symptoms)

Steps	Outcome	Blocks	R ²	F-ratio (block)	B	SE B	β
Step 1	Emotional symptoms	1. Gender	0.12	24.23**	1.78	0.36	0.35**
		2. Gender	0.17	9.04**	1.62	0.36	0.31**
Step 2	Difficulties in emotion regulation	Paternal warmth			8.42E-03	0.03	0.03
		Paternal overprotection			3.97E-02	0.29	0.11
		Paternal psychological control			9.00E-02	0.04	0.17*
		1. Gender	0.01	2.01	4.58	3.23	0.11
		2. Gender	0.07	3.09*	3.79	3.23	0.09
		Paternal warmth			-0.19	0.23	-0.067
Steps 3 & 4	Emotional symptoms	Paternal overprotection			2.98E-03	0.26	0.001
		Paternal psychological control			0.92	0.40	0.20*
		3. Gender	0.30	14.57**	1.45	0.34	0.28**
		Paternal warmth			1.66E-02	0.02	0.05
		Paternal overprotection			3.96E-02	0.03	0.11
		Paternal psychological control			5.03E-02	0.04	0.09
		Difficulties in emotion regulation			4.34E-02	0.01	0.37**

*P<0.05; **P<0.001

Table 3 Results of multiple regression steps 1–4 (eating disorder symptoms)

Steps	Outcome	Blocks	R ²	F-ratio (block)	B	SE B	β
Step 1	Eating disorder symptoms	1. Gender	0.08	7.47*	2.91	1.47	0.14*
		Adverse life events			0.74	0.22	0.24*
Step 2	Difficulties in emotion regulation	2. Gender	0.18	7.51**	1.92	1.43	0.10
		Adverse life events			0.63	0.22	0.20*
		Paternal warmth			2.37E-02	0.10	0.02
		Paternal overprotection			0.25	0.11	0.17*
		Paternal psychological control			0.45	0.18	0.21*
		1. Gender	0.15	15.99**	4.51	2.99	0.10
Steps 3 and 4	Eating disorder symptoms	Adverse life events			2.50	0.46	0.38**
		2. Gender	0.19	8.27**	4.09	3.01	0.09
		Adverse life events			2.38	0.46	0.37**
		Paternal warmth			-6.35E-02	0.21	-0.02
		Paternal overprotection			-9.77E-02	0.24	-0.03
		Paternal psychological control			0.92	0.37	0.20*
Steps 3 and 4	Eating disorder symptoms	3. Gender	0.18	6.47**	1.76	1.43	0.09
		Adverse life events			0.54	0.23	0.17*
		Paternal warmth			2.62E-02	0.10	0.02
		Paternal overprotection			0.25	0.11	0.18*
		Paternal psychological control			0.41	0.18	0.19*
		Difficulties in emotion regulation			3.94E-02	0.04	0.08

*P<0.05; **P<0.001

statistically significant effects on emotional symptoms were those of difficulties in emotion regulation and female gender. Therefore, when the mediator variable was added to the model, the relationship between psychological control and emotional symptoms was no longer significant, which suggests that difficulties in emotion regulation completely mediated the relationship between fathers' psychological control and adolescents' emotional symptoms. In each regression, analyses of casewise diagnostics were run to ensure that there were no single cases exerting undue influence on the model. Standardized residuals were calculated and less than 1% were greater than ±2.5.

■ Hypothesis 2

Similarly, following the results of the correlation analysis gender and proximal adverse life events were entered in block one of the first regression equation predicting eating disorder symptoms. Block two added the predictor variables of fathers' overprotection, warmth and psychological control. The statistical assumptions behind linear regression were met: there was no multicollinearity between predictor variables, the assumption of homoscedasticity held, the residual errors were independent (Durbin-Watson = 2.08), and visual inspection of the histogram of residual

errors indicated that their distribution was only slightly positively skewed. Gender and proximal adverse life events were entered in block one of the second regression equation predicting difficulties in emotion regulation. Block two added the predictor variables of fathers' overprotection, warmth and psychological control. Again, the statistical assumptions behind linear regression were met (e.g., Durbin-Watson = 1.85). Finally, eating disorder symptoms were entered as the response variable, gender and proximal adverse life events were entered in block one, fathers' overprotection, warmth, and psychological control were entered in block two, and difficulties in emotion regulation were entered in block three of the third regression equation. Again, the statistical assumptions behind linear regression were met (e.g., Durbin-Watson = 2.09). As the results in Table 3 suggest, difficulties in emotion regulation did not mediate the relationship between fathers' parenting and adolescents' eating disorder symptoms. In each regression, analyses of casewise diagnostics were run to see whether any single cases were exerting undue influence on the model. Standardized residuals were calculated and revealed that more than 1% (5 cases) of the sample were greater than ± 2.5 . Analysis of boxplots also revealed two of these cases along with one other case as extreme totals on the EAT-26. However, removing these cases did not change the direction of results. Instead, it confirmed that difficulties in emotion regulation did not mediate the relationship between fathers' parenting and adolescents' eating disorder symptoms.

Discussion

This study tested in a socio-economically disadvantaged sample of British adolescents if emotion regulation intervenes in the relation between fathers' parenting and children's emotional and eating disorder symptoms. It showed that only some aspects of fathers' parenting predicted adolescents' emotion regulation, eating disorder symptoms and emotional symptoms, and that emotion regulation mediated the effect of fathers' parenting only on emotional symptoms. Fathers' parenting contributed independently and directly to adolescents' eating disorder symptoms. Emotion regulation was not related, at the multivariate level, to eating disorder symptoms. Fathers' behavioral control, as measured in this study (i.e., as paternal knowledge, monitoring and discipline) did not form part of the present study's research questions as it emerged at the bivariate analysis stage that these aspects of fathers' parenting were not significantly correlated with either of the study's outcome variables or with the proposed

mediator variable. These findings appear to be in contrast to the existing literature which suggests that there is a relationship between low levels of at least maternal behavioral control and adolescent psychopathology [4, 49]. In any case, several researchers have argued that there is more of a specialized link between behavioral control and adolescents' externalizing rather than internalizing problems [1, 12]. Below we discuss in detail our findings in relation to the two study hypotheses.

■ Hypothesis 1

The first hypothesis posited that difficulties in emotion regulation mediate the relationship between fathers' parenting and adolescents' emotional symptoms, after controlling for known confounding variables. As mentioned above, paternal behavioral control was not related to emotional symptoms at the bivariate level, and was therefore not included in the subsequent multivariate analyses carried out to test this hypothesis. In line with previous research [4, 5, 67, 74], we found that fathers' psychological control was directly linked to adolescents' emotional symptoms. Paternal warmth was not significantly associated with adolescents' emotional problems, a finding about which there is some controversy in the literature (e.g., 6, 31]).

The current study also extended previous findings by showing that paternal psychological control is significantly associated with adolescents' difficulties in emotion regulation. This finding supports previous research that maternal psychological control is associated with children's poor emotion regulation [59] and low levels of self-control [27]. However, this study did not corroborate previous findings about the association between emotion regulation and parental warmth. There are a number of potential explanations for this discrepancy, the most obvious being that previous research was concerned primarily with maternal parenting styles, which may have a different effect than paternal warmth on the development of emotion regulation in adolescents. Additionally, previous investigations into the relationship between parenting and children's emotion regulation were carried out on much younger samples and involved external raters' measurements of coping, effortful control and self-regulation (rather than emotion regulation per se).

Even with gender and paternal parenting controlled for a significant positive association was found between difficulties in emotion regulation and emotional symptoms, which corroborates a large amount of research (e.g., [15, 36, 58, 81, 82]). Uniquely, however, this study also showed that the relationship

between parenting and adolescent emotional symptoms was indirect. Paternal psychological control decreased adolescents' abilities to regulate their emotions, leading to emotional problems.

■ Hypothesis 2

The second hypothesis posited that difficulties in emotion regulation mediate the relationship between fathers' parenting and adolescents' eating disorder symptoms, after controlling for known confounding variables. As mentioned above, behavioral control was not related to eating disorder symptoms at the bivariate level, and was therefore not included in the subsequent multivariate analyses carried out to test this hypothesis. Both fathers' psychological control and fathers' overprotection were directly linked to adolescents' eating disorder symptoms. Although there has not been a great deal of research in the relationship between fathers' parenting and adolescents' eating disorder symptoms, this finding is in line with research showing an association between eating disorders and maternal control [29]. Overt controlling strategies by parents, particularly the use of intrusive, guilt-induced control are likely to affect adolescents' need for autonomy and self-identity [2] and this may be played out in their own attempts to exercise control over their eating habits. In accordance with previous findings [50], adolescents' experiences of recent life adversities were also linked to eating disorder symptoms. This relationship was in fact stronger than that between eating disorder symptoms and paternal control, which suggests that eating disorder symptoms may be more susceptible to the influence of exigent experiences than to the influence of parenting.

However, the present study did not establish, contrasting previous research, a relationship between paternal warmth and adolescents' eating disorder symptoms. Previous research has shown that low levels of maternal warmth have a specialized effect on adolescents' risk for bulimia nervosa [83]. The absence of a fathers' warmth effect in this study could mean that paternal affection is not related in the same way as maternal affection to adolescent eating problems. Paternal psychological control, however, was significantly associated with adolescents' difficulties in emotion regulation, as discussed above. Additionally, there was a statistically significant association between number of proximal adverse life events experienced and difficulties in emotion regulation, which is line with the foundation of cumulative risk theory that the confluence of risk factors rather than any singular risk, regardless of its context, is what leads to dysfunction because it overwhelms the adaptive capacities of the organism [25].

When paternal parenting, gender, and adverse life events were controlled, difficulties in emotion regulation were not related to eating disorder symptoms. This finding does not corroborate the extant research, which has linked emotion regulation deficits to both anorexia and bulimia nervosa (e.g., [26, 34]). This discrepancy could be the result of using the EAT-26, and future research might benefit from considering eating disorder specificity when modeling the effect of difficulties in emotion regulation on eating disorder symptoms. At any rate, this finding suggests that emotion regulation could not mediate the effect of parenting on eating disorder symptoms, and therefore that the association between fathers' overprotection and psychological control with adolescents' eating disorder symptoms was a direct one, as was the association between number of proximal adverse life events experienced and eating disorder symptoms.

Limitations

These findings' contribution to the knowledge base notwithstanding, the study suffers from several limitations. Firstly, the sample was selective in that 25% of the pupils available on the day of data collection failed to complete the questionnaire. This could bias the sample in favor of brighter children. Secondly, there are inherent weaknesses in the instruments used to measure the study variables. The DERS is a relatively untested measure of emotion regulation difficulties, and most of the previous studies using it were carried out with older adolescents. A problem of the PBI, on the other hand, is that its overprotection scale assesses only one aspect of psychological control, namely parents' lack of psychological autonomy granting. It does not, therefore, measure guilt-induction, shaming, and withdrawal of affection. More importantly, as discussed earlier, the overprotection scale of the PBI does not differentiate sufficiently between behavioral and psychological control. Although this study included additional parenting measures to assess behavioral and psychological control appropriately, caution must be taken when evaluating the results of the analyses using the overprotection scale of the PBI. Thirdly, although children are regarded as the most crucial informant as regards perceptions of parenting and internalizing problems [60], there is a problem with single source confounding in this study which must be acknowledged. Related to this, self-report screening for eating disorders can be unreliable because denial is a classic feature of eating disorders [80]. Fourthly, parenting was modeled as if it preceded emotion regulation difficulties and internalizing problems, despite the

fact that this was only a cross-sectional study. Although parents' psychological control, for instance, is usually viewed as an antecedent to adolescents' internalizing problems, there is also evidence that parents change their rearing styles in response to adolescent behavior (e.g., 56]). Related to this, the path modeled was that emotion regulation mediated the effect of fathers' parenting on psychopathology, and so alternative explanations, such as that emotion regulation difficulties was the outcome rather than the cause of internalizing problems, and that father's parenting mediated the association between emotion regulation and internalizing difficulties, were ignored. The evidence seems to suggest, however, that emotion regulation deficits confer risk for a range of psychological disorders in children [75], and that emotion regulation mediates the effect of, at least mothers', parenting on child psychopathology. For example, Eisenberg et al. [21], who tested a child-directed model in which mothers' parenting mediated the effect of emotion regulation on psychopathology, showed that this alternative model of causation did not fit the data well.

Conclusions

Despite these limitations, this study's findings helped to fill some of the lacunae in understanding the

dynamics involved in parenting, particularly fathers' psychologically intrusive parenting, and the mechanisms through which this form of control is mediated. This may have implications for intervention programs with emotionally disturbed teens. For example, interventions may need to be modified to target the development of underlying emotion regulation strategies, rather than manifest emotional problems, and to target children experiencing a high number of adverse life events as a high risk group for eating disorders. Parenting programs also stand to benefit from this study's findings that paternal psychological control in particular may have uniquely harmful consequences for adolescent development, such that it may hinder, suppress or prevent the development of emotion regulation abilities, and directly cause or contribute to the symptoms of eating disorders in adolescents.

■ **Acknowledgments** The data used in this study were collected by the first author for the dissertation she submitted in partial fulfillment of the requirements for the degree of MSc in Child Development. The dissertation was supervised by the second author. The authors gratefully acknowledge Rachel Hodgins and Anna Walton who helped with the data collection, and the British Academy and the UK Economic and Social Research Council for supporting the second author.

References

1. Barber BK (1992) Family, personality, and adolescent problem behaviors. *J Marriage Fam* 54:69–79
2. Barber BK (1996) Parental psychological control: revisiting a neglected construct. *Child Dev* 67:3296–3319
3. Barber BK, Harmon EL (2002) Violating the self: parental psychological control of children and adolescents. In: Barber BK (ed) *Intrusive parenting. How psychological control affects children and adolescents*. American Psychological Association, Washington, DC, pp 15–52
4. Barber BK, Olsen JA, Shagle SC (1994) Associations between parental psychological control and behavioral control and youth internalized and externalized behaviors. *Child Dev* 65:1120–1136
5. Barber BK, Stolz HE, Olsen JA, Maughan SL (2005) Parental support, psychological control, and behavioral control: assessing relevance across time, method, and culture. *Monogr Soc Res Child Dev* 70:1–151
6. Bean RA, Barber BK, Crane DR (2006) Parental support, behavioral control, and psychological control among African American youth: the relationships to academic grades, delinquency, and depression. *J Fam Issues* 27:1335–1355
7. Bird HR, Gould MS, Yager B, Staghezza B, Canino G (1989) Risk factors for maladjustment in Puerto Rican children. *J Am Acad of Child and Adolesc Psychiatry* 31:78–85
8. Boyum LA, Parke RD (1995) The role of family emotional expressiveness in the development of children's social competence. *J Marriage Fam* 57:593–608
9. Brand AH, Johnson JH (1982) Note on reliability of the Life Events Checklist. *Psychol Rep* 50:1274
10. Cabrera NJ, Tamis-LeMonda CS, Bradley RH, Hofferth S, Lamb ME (2000) Fatherhood in the twenty-first century. *Child Dev* 71:127–136
11. Calzada EJ, Eyberg SM, Rich B, Quersido JG (2004) Parenting disruptive preschoolers: experiences of mothers and fathers. *J Abnorm Child Psychol* 32:203–213
12. Caron A, Weiss B, Harris V, Catron T (2006) Parenting behavior dimensions and child psychopathology: specificity, task dependency, and interactive relations. *J Clin Child Adolesc Psychol* 35:34–45
13. Coddington RD (1972a) The significance of life events as etiologic factors in the diseases of children: I. A survey of professional workers. *J Psychosom Res* 16:7–18
14. Coddington RD (1972b) The significance of life events as etiologic factors in the diseases of children: II. A study of a normal population. *J Psychosom Res* 16:205–213
15. Cole PM, Zahn-Waxler C, Fox NA, Usher BA, Welsh JD (1996) Individual differences in emotion regulation and behavior problems in preschool children. *J Abnorm Psychol* 105:518–529

16. Davidov M, Grusec JE (2006) Untangling the links of parental responsiveness to distress and warmth to child outcomes. *Child Dev* 77:4–58
17. Denham SA, Blair KA, DeMulder E, Levitas J, Sawyer K, Auerbach-Major S, et al (2003) Preschool emotional competence: pathway to social competence. *Child Dev* 74:238–256
18. Eisenberg N (2004) Emotion-related regulation: an emerging construct. *Merrill-Palmer Q* 50:236–259
19. Eisenberg N, Fabes RA, Guthrie IK, Murphy BC, Maszk P, Holmgren R, et al (1996) The relations of regulation and emotionality to problem behavior in elementary school children. *Dev Psychopathol* 8:141–162
20. Eisenberg N, Fabes RA, Shepard SA, Guthrie IK, Murphy BC, Reiser M (1999) Parental reactions to children's negative emotions: longitudinal relations to quality of children's social functioning. *Child Dev* 70:513–534
21. Eisenberg N, Gershoff ET, Fabes RA, Shepard SA, Cumberland AJ, Losoya SH, Guthrie IK, Murphy BC (2001) Mother's emotional expressivity and children's behavior problems and social competence: mediation through children's regulation. *Dev Psychol* 37:475–490
22. Eisenberg N, Valiente C, Morris AS, Fabes RA, Cumberland A, Reiser M, et al (2003) Longitudinal relations among parental emotional expressivity, children's regulation, and quality of socioemotional functioning. *Dev Psychol* 39:3–19
23. Eisenberg N, Zhou Q, Spinrad TL, Valiente C, Fabes RA, Liew J (2005) Relations among positive parenting, children's effortful control, and externalizing problems: a three-wave longitudinal study. *Child Dev* 76:1055–1071
24. Enns MW, Cox BJ, Clara I (2002) Parental bonding and adult psychopathology: results from the US national comorbidity survey. *Psychol Med* 32:997–1008
25. Evans GW (2003) A multimethodological analysis of cumulative risk and allostatic load among rural children. *Dev Psychol* 39:924–933
26. Everill J, Waller G, Macdonald W (1995) Dissociation in bulimic and non-eating disordered women. *Int J Eat Disord* 17:127–134
27. Finkenauer C, Engels R, Baumeister R (2005) Parenting behaviour and adolescent behavioural and emotional problems: the role of self-control. *Int J Behav Dev* 29:58–69
28. Feng X, Shaw DS, Kovacs M, Lane T, O'Rourke FE (2008) Emotion regulation in preschoolers: the roles of behavioral inhibition, maternal affective behavior, and maternal depression. *J Child Psychol Psychiatry* 49:132–141
29. Fonseca H, Ireland M, Resnick MD (2002) Familial correlates of extreme weight control behaviors among adolescents. *Int J Eat Disord* 32:441–448
30. Gable S, Isabella RA (1992) Maternal contributions to infant regulation of arousal. *Infant Behav Dev* 15:95–107
31. Galambos NL, Barker ET, Almeida DM (2003) Parents do matter: trajectories of change in externalizing and internalizing problems in early adolescence. *Child Dev* 74:578–594
32. Garner DM, Garfinkel PE (1979) The Eating Attitudes Test: an index of the symptoms of anorexia nervosa. *Psychol Med* 9:273–279
33. Garner DM, Olmsted MP, Bohr Y, Garfinkel PE (1982) The Eating Attitudes Test: psychometric features and clinical correlates. *Psychol Med* 12:871–878
34. Gilboa-Schechtman E, Avnon L, Zubery E, Jeczmierni P (2006) Emotional processing in eating disorders: specific impairment or general distress-related deficiency. *J Depress Anxiety* 23:331–339
35. Gillespie NA, Zhu G, Neale MC, Heath AC, Martin NG (2003) Direction of causation modeling between cross-sectional measures of parenting and psychological distress in female twins. *Behav Genet* 33:383–396
36. Goldstein M, Heaven PCL (2000) Perceptions of the family, delinquency, and emotional adjustment among youth. *Pers Individ Dif* 29:1169–1178
37. Goodman R (1997) The Strengths and Difficulties Questionnaire: a research note. *J Child Psychol Psychiatry* 38:581–586
38. Goodman R (1999) The extended version of the Strengths and Difficulties Questionnaire as a guide to child psychiatric caseness and consequent burden. *J Child Psychol Psychiatry* 40:791–799
39. Goodman R (2001) Psychometric properties of the Strengths and Difficulties Questionnaire (SDQ). *J Am Acad Child Adolesc Psychiatry* 40:1337–1345
40. Goodman R, Meltzer H, Bailey V (1998) The Strengths and Difficulties Questionnaire: a pilot study on the validity of the self-report version. *Eur Child Adolesc Psychiatry* 7:125–130
41. Goodman R, Scott S (1999) Comparing the Strengths and Difficulties Questionnaire and the Child Behavior Checklist: is small beautiful? *J Abnorm Child Psychol* 27:17–24
42. Gratz KL, Gunderson L (2006) Preliminary data on an acceptance-based emotion regulation group intervention for deliberate self-harm among women with borderline personality disorder. *Behav Ther* 37:25–35
43. Gratz KL, Roemer L (2004) Multidimensional assessment of emotion regulation and dysregulation: development, factor structure, and initial validation of the Difficulties in Emotion Regulation Scale. *J Psychopathol Behav Assess* 26:41–54
44. Gray MR, Steinberg L (1999) Unpacking authoritative parenting: reassessing a multi-dimensional construct. *J Marriage Fam* 61:574–587
45. Greenberger E, Chen C, Tally SR, Dong Q (2000) Family, peer, and individual correlates of depressive symptomatology among US and Chinese adolescents. *J Consult Clin Psychol* 68:209–219
46. Hart CH, Newell LD, Olsen SF (2003) Parenting skills and social-communicative competence in childhood. In: Greene JO, Bureson BR (eds) *Handbook of communication and social interaction skills*. Lawrence Erlbaum Associates, Mahwah, pp 753–797
47. Hawes DJ, Dadds MR (2004) Australian data and psychometric properties of the Strengths and Difficulties Questionnaire. *Aust NZ J Psychiatry* 38:644–651
48. Hill AL, Degnan KA, Calkins SD, Keane SP (2006) Profiles of externalizing behavior for boys and girls across preschool: the roles of emotion regulation and inattention. *Dev Psychol* 42:913–928
49. Jacobson KC, Crockett LJ (2000) Parental monitoring and adolescent adjustment: an ecological perspective. *J Res Adolesc* 10:65–97
50. Johnson JG, Cohen P, Kasen S, Brook JS (2002) Childhood adversities associated with risk for eating disorders or weight problems during adolescence or early adulthood. *Am J Psychiatry* 159:394–400
51. Kendler KS, Sham PC, McLean CJ (1997) The determinants of parenting: an epidemiological, multi-informant, retrospective study. *Psychol Med* 27:549–563
52. King V, Sobolewski JM (2006) Non-resident fathers' contributions to adolescent well-being. *J Marriage Fam* 68:537–557
53. Kliewer W, Fearnow MD, Miller PA (1996) Coping socialization in middle childhood: tests of maternal and paternal influences. *Child Dev* 67:2339–2357

54. Kucharska-Pietura K, Nikolaou V, Masiak M, Treasure J (2004) The recognition of emotion in the faces and voice of anorexia nervosa. *Int J Eat Disord* 35:42–47
55. Lamb ME (2000) The history of research on father involvement: an overview. *Marriage Fam Rev* 29:23–42
56. Lifford KJ, Harold GT, Thapar A (2008) Parent-child relationships and ADHD symptoms: a longitudinal analysis. *J Abnorm Child Psychol* 36:285–296
57. May AL, Kim J-Y, McHale SM, Crouter AC (2006) Parent-adolescent relationships and the development of weight concerns from early to late adolescence. *Int J Eat Disord* 39:729–740
58. Mennin DS, Heimberg RG, Turk CL, Fresco DM (2005) Preliminary evidence for an emotion dysregulation model of generalized anxiety disorder. *Behav Res Ther* 43:1281–1310
59. Morris AS, Silk JS, Steinberg L, Myers SS, Robinson LR (2007) The role of the family context in the development of emotion regulation. *Soc Dev* 16:361–388
60. Muris P, Meesters C, Schouten E, Hoge E (2004) Effects of perceived control on the relationship between perceived parental rearing behaviours and symptoms of anxiety and depression in nonclinical preadolescents. *J Youth Adolesc* 33:51–58
61. Muris P, Meesters C, Van den Berg F (2003) The Strengths and Difficulties Questionnaire (SDQ): further evidence for its reliability and validity in a community sample of Dutch children and adolescents. *Eur Child Adolesc Psychiatry* 12:1–8
62. Murphy BC, Eisenberg N, Fabes RA, Shepard S, Guthrie IK (1999) Consistency and change in children's emotionality and regulation: a longitudinal study. *Merrill-Palmer Q* 45:413–444
63. Murphy E, Brewin CR, Silka L (1997) The assessment of parenting using the Parental Bonding Instrument: two or three factors? *Psychol Med* 27:333–342
64. Murray L, Wooglar M, Martins C, Christaki A, Hipwell A, Cooper P (2006) Conversations around homework: links to parental mental health, family characteristics and child psychological functioning. *Br J Dev Psychol* 24:125–149
65. Parker G, Tupling H, Brown LB (1979) A parental bonding instrument. *Br J Med Psychol* 52:1–10
66. Patton GC, Coffey C, Posterino M, Carlin JB, Wolfe R (2001) Parental 'affectionless control' in adolescent depressive disorder. *Social Psychiatry Psychiatr Epidemiol* 36:475–480
67. Pettit GS, Laird RD, Dodge KA, Bates JE, Criss MM (2001) Antecedents and behavior-problem outcomes of parental monitoring and psychological control in early adolescence. *Child Dev* 72:583–598
68. Phares V, Lopez E, Fields S, Kamboukos D, Duhig AM (2005) Are fathers involved in pediatric psychology research and treatment? *J Pediatr Psychol* 30:631–643
69. Rodgers B (1996) Reported parental behaviour and adult affective symptoms .1. Associations and moderating factors. *Psychol Med* 26:51–61
70. Rosen JC, Silberg NT, Gross J (1988) Eating Attitudes Test and Eating Disorders Inventory: norms for adolescent girls and boys. *J Consult Clin Psychol* 56:305–308
71. Romans SE, Gendall KA, Martin JL, Mullen PE (2001) Child sexual abuse and later disordered eating: a New Zealand epidemiological study. *Int J Eat Disord* 29:380–392
72. Rowe R, Pickles A, Simonoff E, Bulik CM, Silberg JL (2002) Bulimic symptoms in the Virginia Twin Study of Adolescent Behavioral Development: correlates, comorbidity, and genetics. *Biol Psychiatry* 51:172–182
73. Shek DTL (2005) Perceived parental control processes, parent-child relational qualities, and psychological well-being in Chinese adolescents with and without economic disadvantage. *J Genet Psychol* 166:171–188
74. Shek DTL, Lee TY (2005). Hopelessness and Chinese adolescents in Hong Kong: demographic and family correlates. *Int J Adolesc Med Health* 17:279–290
75. Silk JS, Steinberg L, Morris AS (2003) Adolescents' emotion regulation in daily life: depressive symptoms and problem behavior. *Child Dev* 74:1869–1880
76. Stolz HE, Barber BK, Olsen JA (2005) Toward disentangling fathering and mothering: an assessment of relative importance. *J Marriage Fam* 67:1076–1092
77. Thompson RA (1994). Emotion regulation: a theme in search of definition. *Monogr Soc Res Child Dev* 59:25–52
78. Tiet QQ, Bird H, Davies M, Hoven C, Cohen P, Jensen P, Goodman S (1998) Adverse life events and resilience. *J Am Acad Child Adolesc Psychiatry* 37:1191–1200
79. Tiet QQ, Bird HR, Hoven CW, Moore R, Wu P, Wicks J, Jensen PS, Goodman S, Cohen P (2001) Relationship between specific adverse life events and psychiatric disorders. *J Abnorm Child Psychol* 29:153–164
80. Treasure J (2006) Where do eating disorders lie on the diagnostic spectrum and what does it mean? *Nord J Psychiatry* 60:27–31
81. Tull MT (2006) Extending an anxiety sensitivity model of uncued panic attack frequency and symptom severity: the role of emotion dysregulation. *Cognit Ther Res* 30:177–184
82. Turk CL, Heimberg RG, Luterek JA, Mennin DS, Fresco DM (2005) Emotion dysregulation in generalized anxiety disorder: a comparison with social anxiety disorder. *Cognit Ther Res* 29:89–106
83. Vandereycken W (2002) Families of Patients with Eating Disorders. In: Fairburn CG, Brownell KD (Eds), *Eating Disorders and Obesity: A Comprehensive Handbook*. New York, Guilford Press, PP. 215–220
84. Wade TD, Treloar SA, Martin NG (2001) A comparison of family functioning, temperament, and childhood conditions in monozygotic twin pairs discordant for lifetime bulimia nervosa. *Am J Psychiatry* 158:1155–1157
85. Wilhelm K, Niven H, Parker G, Hadzi-Pavlovic D (2005) The stability of the Parental Bonding Instrument over a 20-year period. *Psychol Med* 35:387–393
86. Woerner W, Fleitlich-Bilyk B, Martinius R, Fletcher J, Cucchiario G, Dalgalarondo P, et al (2004) The Strengths and Difficulties Questionnaire overseas: evaluations and applications of the SDQ beyond Europe. *Eur Child Adolesc Psychiatry* 13(Suppl 2): 47–54
87. Wonderlich SA, Swift WJ (1990). Perceptions of parental relationships in the eating disorders: the relevance of depressed mood. *J Abnorm Psychol* 99:353–360