Parental behaviour and adolescents’ emotional eating

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Abstract

Parents can influence their children’s emotional eating behaviour through modelling processes and parenting. In this study, data on parenting (support, behavioural control and psychological control), emotional eating, and demographic variables were gathered among both parents and two adolescent children of 428 Dutch families. Structural equation modelling showed positive associations between parents’ emotional eating and adolescents’ emotional eating. Adolescent’s reports of low maternal support and of high psychological control for younger adolescents and low behavioural control for older adolescents were associated with higher emotional eating. Parents’ reports of parenting were not significantly associated with adolescent’s emotional eating. Multi-group analyses revealed no significant differences in associations between modelling and parenting factors on the one hand, and adolescent emotional eating on the other, by sex of the older or younger adolescent.

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Introduction

It is widely accepted that emotional arousal and distress affects eating behaviour (Ganley, 1989). In humans, evidence points to an individual difference model of food intake in response to negative effect (Greeno & Wing, 1994); in this model, the physiologically normal reaction to emotional arousal and distress is loss of appetite. In contrast, some individuals respond by excessive eating, or at least not eating less; a phenomenon that has been named emotional eating (Bruch, 1973; Greeno & Wing, 1994; Kaplan & Kaplan, 1957; Oliver & Wardle, 1999; Schachter, Goldman, & Gordon, 1968). Eating more versus less in response to stress is dependent on the context and type of stress, but has been considered an individual characteristic because it was found to be highly consistent over time and varied more between than within individuals (Stone & Brownell, 1994). Why some people develop this kind of eating behaviour and others do not remains unclear. Early observational studies have led to the suggestion that parental behaviour might play an important role in the development of emotional eating in childhood (Bruch, 1973). It was proposed that especially an emotional feeding style (i.e. feeding in response to emotional distress) might enhance emotional eating. In a more recent study, mothers who scored high on emotional eating themselves were found to have a more emotional feeding style, although this feeding style was not associated with either mothers’ or children’s body mass index (BMI) (Wardle, Sanderson, Guthrie, Rapoport, & Plomin, 2002). In Brown and Ogden (2004) ‘parental control over children’s diet’ and ‘parental levels of control over their child’s behaviour using food’ were unrelated to children’s scores on a short version of the DEBQ emotional eating scale. Further, young girls’ perceptions of parental pressure to eat more were positively associated with emotional eating (Carper, Fisher, & Birch, 2000). Other studies on modelling or parenting effects on emotional eating in children or adolescents are lacking, although different aspects of parental behaviour are reported to be related to children’s food intake, eating behaviour, disordered eating, and weight status. The
objective of the present study is to determine how modelling and general parenting (support and control) factors are related to adolescent’s emotional eating.

**Parental modelling**

High similarities in emotional eating between parents and children could indicate that, besides possible genetic effects, parents and children influence each other’s eating behaviour, for example through modelling. Children might model not only their parents’ food intake and preferences (Birch & Fisher, 1998), but also their attitudes towards food and reasons behind eating behaviours (Brown & Ogden, 2004). Surprisingly, studies on the role of familial modelling of body image dissatisfaction and disordered eating behaviour have been ambiguous, with some reporting no similarities between parents and children (Littleton & Ollendick, 2003) whereas others found that modelling occurs (especially of maternal eating behaviours) even at a very young age (Ricciardelli & McCabe, 2001).

**Parenting**

Many studies have suggested that parenting influences different aspects of children’s behavioural and cognitive development, including disordered eating (Birch & Fisher, 1998; Minuchin et al., 1975; Tata, Fox, & Cooper, 2001). Parenting can refer to food-specific parenting or feeding practices but also covers general parenting (Hughes, Power, Fisher, Mueller, & Nicklas, 2005). This is the context in which parenting practices occur and is often operationalized by the dimensions control and support (Baumrind, 1971). The control dimension varies from supervision and monitoring to more manipulatively suppressive control while the support dimension refers to the affective and supportive behaviour of the parents (Finckenauger, Engels, & Baumeister, 2005; Lamborn, Mounts, Steinberg, & Dornbusch, 1991). Those two dimensions have been related to children’s behaviours, including health risk behaviours and internalizing problem behaviour (Maccoby & Martin, 1983).

Studies on parental control and food intake tend to focus on young children. A series of experiments by Birch and Fisher in young children (Birch & Fisher, 2000; Fisher & Birch, 1999a, b, 2000) showed that food restrictions were associated with unintended outcomes, such as higher preference for and intake of the restricted foods and lower ability to self-regulate intake (Birch & Fisher, 1998; Fisher & Birch, 1999b; Johnson & Birch, 1994). Similar results on snacking were found by Brown and Ogden (2004) although others found opposite results (De Boudeaudhuij, 1997), and the association between parental control and overweight in children has not consistently been found (Faith et al., 2004; Robinson, Kiernan, Matheson, & Haydel, 2001). In a cross-sectional survey, parental supervision and monitoring were associated with higher levels of extreme dieting in boys, but not girls (Fonseca, Ireland, & Resnick, 2002).

These inconsistent findings might be explained by the way parents enforce control, thus the type of control. Parental control can consist of active supervision of and acquiring knowledge about what children are doing; this is called *behavioural control*. But control can also be harsh, suppressive and manipulating, including behaviours, such as guilt induction, love withdrawal and excessive pressure for change; this is called *psychological control*. Generally, behavioural control was found to be a protective factor for problem behaviour while psychological control was a risk factor (Finckenauger et al., 2005). Furthermore, psychological control is suppressive and authoritarian and therefore more likely to undermine the child’s autonomy and ability to self-regulate intake (Birch & Fisher, 1998).

*Parental support* has been associated with less problem behaviour and emotional problems in children (Finckenauger et al., 2005). Studies on eating problems and obesity are generally in line with these findings. Lack of parental support and parental caring has been related to disordered eating and body dissatisfaction (Littleton & Ollendick, 2003; McVey, Pepler, Davis, Flett, & Abdoell, 2002). Another study found that parental overprotection, not care, was related to body dissatisfaction and, for females, disordered eating (Tata et al., 2001). In addition, one study reported a negative association between parental support and obesity (Lissau & Sorensen, 1994).

In the present study we examined the associations between parental emotional eating, behavioural control, psychological control and support, and the level of adolescents’ emotional eating in 428 families consisting of both parents and two adolescent children. It was hypothesized that adolescents model their parents and that high behavioural control; low psychological control and high support were associated with higher emotional eating in adolescents. Both adolescents of each family were included to cover a broader age range. Our design with multiple reporters per family provided reliable information about both parents and adolescent’s scores on eating behaviour and allowed to compare influences of parenting reported by the adolescent and by the parents themselves. Moreover, we tested whether paternal and maternal behaviours were differentially related to adolescent behaviours, and whether the adolescent’s sex moderated these associations. Most research in this area has focussed on maternal feeding practices, despite the fact that fathers seem to be important in child eating disturbances (Blissett, Meyer, & Haycraft, 2006). Given that the role of children’s weight status is relevant to studies of parental influence on children’s eating (Birch, Fisher, & Davison, 2003; Francis & Birch, 2005) an additional model was tested that included adolescents’ weight status.

**Methods**

**Procedure**

Participants of this study were 428 Dutch families (Harakeh, Scholte, de Vries, & Engels, 2005; Van Der...
Vorst, Engels, Meeus, Dekovic, & Van Leeuwe, 2005). Families with at least two children aged between 13 and 16 years were selected from the registers of 22 municipalities in the Netherlands, and recruited through a letter. Of these approximately 5400 families, a total of 885 families were willing to participate and returned the completed response forms. These families were contacted by telephone to establish whether they met the study criteria. In order to participate in the study parents had to be married or living together, family members had to be biologically related, and the children could not be twins. Other exclusion criteria were mental or physical disability in adolescents. From the 765 families fulfilling the study criteria, 428 families were selected to acquire an equal distribution of the educational levels of adolescents and of all the possible sibling dyads (i.e. boy–boy, girl–boy, boy–girl and girl–girl) in our sample. In each family both parents and two adolescent children participated. Data collection took place at the respondents’ homes between November 2002 and April 2003. A trained interviewer visited the families, explained the procedure, and clarified questions. To maintain confidentiality and avoid mutual influences no interaction between family members was allowed when filling in the questionnaires. Each family received €30 when all four family members had completed the questionnaires.

Sample characteristics

The participating adolescents were between 13 and 16 years old, and boys (50.3%) and girls (49.7%) were represented in almost equal numbers. Most adolescents (96%) were of Dutch ethnicity (defined by native country of the parents), and they were from various secondary educational levels in the Netherlands. On the whole, 34.1% of the adolescents attended lower-level education (preparatory secondary school for technical and vocational training; in the Dutch school system LWOO, VMBO), 32.7% attended middle-level education (called preparatory secondary school for college; in the Dutch school system called HAVO) and 33.3% attended higher-level education (preparatory secondary school for university; in the Dutch school system called VWO, atheneum, gymnasium).

Measurements

Emotional eating of adolescents and parents was measured with a subscale of 13 items of the Dutch Eating Behaviour Questionnaire (Strien, Frijters, Bergers, & Defares, 1986b) (originally published in Dutch (Strien, Freijters, Bergers, & Defares, 1986a)). Examples of items are “Do you have a desire to eat when you are irritated?” and “Do you have a desire to eat when you feel alone?” All items had to be rated on a 5-point scale from 1 (never) to 5 (very often). The emotional eating scale has a high internal consistency, high validity for food consumption, and high convergent and discriminative validity (Strien, 2002). The instrument is also easy to fill in by adolescents; it has been used in other studies with children (Wardle et al., 1992). Cronbach’s alphas in this study were high (Table 1).

Parenting was reported by adolescents about both parents separately, and also by the parents about both adolescents separately. The support dimension of parenting was measured with a subscale of the Relational Support Inventory (Scholte, van Lieshout, & van Aken, 2001). This 12-item questionnaire (e.g., “My mother supports me in the things I do”/“I support my child in the things he/she does”) is rated on a response scale ranging from 1 (completely untrue) to 5 (completely true). The control dimension of parenting was measured by behavioural control (control on whereabouts and activities) and psychological control (coercive, non-democratic discipline and psychological manipulative strategies in order to control the child’s behaviour). Behavioural control was assessed with a 5-item scale (e.g., “Before you leave on a Saturday evening, does your father (mother) want to know with whom and/or where you are?”) rated on a response scale from 1 (never) to 5 (always) (Kerr & Stattin, 2000). A Dutch translation (Beyers & Goossens, 1999) of the Steinberg Parenting Instrument (Steinberg et al., 1994) was used to assess psychological control. The 8-item questionnaire (e.g. “My father (mother) makes me feel guilty when I fail at school”) had to be rated on a response scale ranging from 1 (completely not true) to 5 (completely true). The original scale showed high internal consistency, external validity, and test-retest reliability (Glasgow et al., 1997; Gray Little, Williams, & Hancock, 1997; Lamborn et al., 1991). The Cronbach’s alphas in our study were satisfactory for all parenting measurements and reporters (Table 1). Analyses of inter-correlations of the parenting practices showed significant but moderate correlations between the scales (Table 1).

BMI was calculated based on self-reported height and weight. To determine whether a child was overweight or obese we used international cut-off scores (Cole, Bellizzi, Flegal, & Dietz, 2000).

Strategy for analyses

Adolescents’ average scores on emotional eating were calculated for sex, age, and educational level group. Differences between groups were analysed by t-tests (sex) or one-way ANOVAs (age and education level) with Scheffe post-hoc tests. Next, Pearson correlations between parental behaviours and adolescents’ emotional eating were computed.

Structural equation modelling with ML estimation in AMOS 5.0 (Arbuckle, 2003; Arbuckle & Worthke, 1999) was used to determine associations between parenting (support and control) and parental emotional eating on the one hand, and adolescent emotional eating on the other simultaneously (Fig. 1). Additionally, error terms of emotional eating were allowed to correlate between spouses and between siblings to correct for inter-correlation between family members. Similarly, error terms between
Table 1
Mean scores (SD), Cronbach’s $\alpha$, and correlations ($\times 100$) between emotional eating and parenting

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<tbody>
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<td>—</td>
<td>0.07</td>
<td>1.50</td>
<td>1.13</td>
<td>1.01</td>
<td>1.09</td>
<td>1.08</td>
<td>1.60</td>
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<tr>
<td>2. Emotional eating (F)</td>
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<td>0.06</td>
<td>0.08</td>
<td>0.15</td>
<td>0.01</td>
<td>0.02</td>
<td>0.10</td>
<td>0.18</td>
<td>0.16</td>
<td>0.07</td>
<td>0.23</td>
<td>0.02</td>
<td>0.01</td>
<td>0.04</td>
<td>0.02</td>
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<tr>
<td>3. Emotional eating (M)</td>
<td>1.12</td>
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<td>0.09</td>
<td>0.06</td>
<td>0.03</td>
<td>0.08</td>
<td>1.10</td>
<td>0.10</td>
<td>0.03</td>
<td>0.05</td>
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<td>0.16</td>
<td>0.05</td>
<td>1.16</td>
<td>0.16</td>
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<tr>
<td>4. Support (A–F)</td>
<td>—</td>
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<td>0.12</td>
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<td>0.45</td>
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<td>0.29</td>
<td>0.33</td>
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<td>0.00</td>
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<tr>
<td>5. Behavioural control (A–F)</td>
<td>0.01</td>
<td>0.07</td>
<td>0.10</td>
<td>0.06</td>
<td>0.18</td>
<td>0.63</td>
<td>0.06</td>
<td>0.12</td>
<td>1.17</td>
<td>0.00</td>
<td>0.10</td>
<td>0.25</td>
<td>0.30</td>
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<tr>
<td>6. Psychological control (A–F)</td>
<td>0.15</td>
<td>0.12</td>
<td>0.43</td>
<td>0.01</td>
<td>0.34</td>
<td>0.12</td>
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<td>0.31</td>
<td>0.31</td>
<td>0.31</td>
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<tr>
<td>7. Support (A–M)</td>
<td>—</td>
<td>0.04</td>
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<td>0.60</td>
<td>0.31</td>
<td>0.32</td>
<td>0.11</td>
<td>0.39</td>
<td>0.21</td>
<td>0.08</td>
<td>0.18</td>
<td>0.35</td>
<td>0.00</td>
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<td>0.00</td>
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<tr>
<td>8. Behavioural control (A–M)</td>
<td>0.01</td>
<td>0.01</td>
<td>0.07</td>
<td>1.16</td>
<td>0.63</td>
<td>0.02</td>
<td>0.27</td>
<td>0.13</td>
<td>0.21</td>
<td>0.02</td>
<td>0.27</td>
<td>0.13</td>
<td>0.21</td>
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<td>0.07</td>
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<td>9. Psychological control (A–M)</td>
<td>1.17</td>
<td>0.09</td>
<td>0.33</td>
<td>0.10</td>
<td>0.68</td>
<td>0.36</td>
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<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
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<tr>
<td>10. Support (F)</td>
<td>0.15</td>
<td>0.13</td>
<td>0.15</td>
<td>0.08</td>
<td>0.25</td>
<td>0.21</td>
<td>0.07</td>
<td>0.23</td>
<td>0.48</td>
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<td>0.07</td>
<td>0.18</td>
<td>0.28</td>
<td>0.18</td>
</tr>
<tr>
<td>11. Behavioural control (F)</td>
<td>0.08</td>
<td>0.02</td>
<td>0.05</td>
<td>0.02</td>
<td>0.01</td>
<td>0.10</td>
<td>0.12</td>
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<tr>
<td>12. Psychological control (F)</td>
<td>0.16</td>
<td>0.12</td>
<td>0.15</td>
<td>0.13</td>
<td>0.27</td>
<td>0.28</td>
<td>0.08</td>
<td>0.12</td>
<td>0.28</td>
<td>0.00</td>
<td>0.15</td>
<td>0.16</td>
<td>0.41</td>
<td>0.41</td>
<td>0.41</td>
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<tr>
<td>13. Support (M)</td>
<td>0.01</td>
<td>0.03</td>
<td>0.05</td>
<td>0.12</td>
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<td>0.13</td>
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<td>14. Behavioural control (M)</td>
<td>0.00</td>
<td>0.02</td>
<td>0.01</td>
<td>0.02</td>
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<tr>
<td>15. Psychological control (M)</td>
<td>0.09</td>
<td>0.05</td>
<td>0.13</td>
<td>0.15</td>
<td>0.11</td>
<td>0.26</td>
<td>0.22</td>
<td>0.07</td>
<td>1.17</td>
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<td>0.27</td>
<td>0.14</td>
<td>0.50</td>
<td>0.43</td>
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</tbody>
</table>

**Older child**

Average 2.23 1.99 2.40 3.93 3.47 2.15 4.12 4.00 2.20 4.12 4.34 2.23 4.23 4.36 4.61 2.05

SD 0.74 0.65 0.71 0.53 0.99 0.58 0.41 0.76 0.54 0.40 0.61 0.49 0.37 0.47 0.45

Cronbach’s $\alpha$ 0.93 0.95 0.94 0.85 0.88 0.74 0.78 0.77 0.68 0.79 0.69 0.68 0.75 0.62 0.68

**Younger child**

Average 2.23 — — 3.95 3.72 2.15 4.12 4.08 2.22 4.15 4.53 2.10 4.39 4.73 1.98

SD 0.73 — — 0.48 0.89 0.55 0.40 0.66 0.52 0.39 0.52 0.39 0.38 0.47

Cronbach’s $\alpha$ 0.92 — — 0.81 0.87 0.70 0.76 0.71 0.65 0.80 0.73 0.74 0.83 0.83 0.62

The correlations between emotional eating of adolescents (A), fathers (F) and mothers (M) and parenting scores reported by adolescent about the parents (A–F/A–M) and by the parents themselves (F/M) are reported for older (upper right-hand half) and younger (lower left-hand half) adolescents separately. Significant differences effects are marked: *p < 0.05; **p < 0.01; ***p < 0.001 (n = 428 families).

Note: Bold numbers: Correlations in reports of parenting by the adolescent about parents and by the parents themselves.
parenting measurements were allowed to correlate between siblings and within persons for the different measures of parenting (not presented in the figure).

As parenting was reported by multiple reporters, separate models were run for the different reporters. An alternative model was tested in which the report of the adolescent on both parents and both parental reports were loaded on one latent construct (per variable, for instance parental support). However, correlations between the parents’ and the adolescents’ reports on parenting as well as the correlations between the mothers’ and fathers’ reports showed low correspondence between the reports (Table 1). The model with these latent constructs was therefore not supported by the data resulting in the necessity to test models for the different reports. This also allows comparing model findings between father and mother and between effects of parenting reported by parents versus effects perceived by adolescents.

To test whether certain effects differed between boys and girls, multi-group analyses were performed. In multi-group analyses, differences between the sexes were tested by fixing the betas and testing whether the model fit ($\Delta $$\chi^2$) was significantly better for the model in which the paths were constrained to be equal. Finally, a model was tested in which BMI of both adolescents was added as a confounder; in this model BMI of each adolescent was linked to their emotional eating score. This way the association between BMI and emotional eating was tested and emotional eating score was corrected for BMI.

The fit of the models were assessed by the following global fit indexes: $\chi^2$, GFI (Goodness of Fit Index), NFI (Bentler–Bonett Normed Fit Index), AGFI (Adjusted Goodness of Fit Index) and RMSEA (Root-Mean-Square Error of Approximation). Because the chi-square goodness-of-fit test is sensitive to sample size, the fit indices GFI, NFI, AGFI and RMSEA were utilized. Except for the values of RMSEA (which is satisfactory with $p<0.08$), goodness-of-fit values greater than 0.90 are considered an acceptable fit (Bentler & Bonett, 1980).

**Results**

**Demographic differences**

Girls scored higher on emotional eating than boys (Table 2). No significant differences in emotional eating were found between different age groups, between older and younger adolescents, or between educational levels.

Significant correlations were found between adolescents’ and parents’ emotional eating (Table 1). A significant association was found between emotional eating of parents and adolescents. Additionally, correlations computed by sex of the child showed that emotional eating in mothers was positively related to both boys’ ($r = 0.13$, $p<0.01$) and girls’ ($r = 0.13$, $p<0.01$) emotional eating. Fathers’

<table>
<thead>
<tr>
<th>Table 2 Average scores (range 1–5) on emotional eating scale for different groups of participants</th>
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<tbody>
<tr>
<td><strong>Sex</strong></td>
</tr>
<tr>
<td>Boys</td>
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<td>Girls</td>
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<td><strong>Age (years)</strong></td>
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<td><strong>Birth order</strong></td>
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<td><strong>Education</strong></td>
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<td>Middle</td>
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<td>Higher*</td>
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<td>Other</td>
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*Different at $p<0.05$. 

Fig. 1. Associations between parenting scores and emotional eating of older (O) and younger (Y) adolescents and their fathers (F) and mothers (M) (standardized estimates). Notes: The model was run four times and estimates are reported for the different reports: adolescents about mother (model fit: $\chi^2$ (df = 18, N = 428) = 33.588, GFI = 0.986, NFI = 0.933, AGFI = 0.954 and RMSEA = 0.045); adolescents about father (model fit: $\chi^2$ (df = 18, N = 428) = 29.748, GFI = 0.986, NFI = 0.933, AGFI = 0.954 and RMSEA = 0.045); mother report (model fit: $\chi^2$ (df = 18, N = 428) = 26.685, GFI = 0.991, NFI = 0.983, AGFI = 0.971 and RMSEA = 0.019); father report (model fit: $\chi^2$ (df = 18, N = 428) = 50.903, GFI = 0.978, NFI = 0.965, AGFI = 0.932 and RMSEA = 0.065). \( ^{\dagger} \leq 0.10; *p < 0.05; **p < 0.01 \) (n = 428 families).
emotional eating was solely significantly positively related to boys’ emotional eating ($r = 0.11, p < 0.05$) (for girls: $r = 0.08, \text{ns}$).

**Family factors in emotional eating**

Structural equation modelling showed significant positive associations between mothers' and adolescents' emotional eating for both older and younger adolescents (Fig. 1). Fathers’ emotional eating was significantly associated with emotional eating of their younger, but not their older adolescents.

Significant associations between parenting and emotional eating of adolescents were only found when parenting was reported by the adolescent about the mother. For younger adolescents, lower perceived maternal support and higher perceived maternal psychological control were associated with higher levels of emotional eating. For older adolescents, higher perceived maternal behavioural control was related to higher levels of emotional eating, and a trend was found for higher emotional eating at higher levels of perceived maternal psychological control. Perceived paternal support and psychological control (for younger adolescent only) were borderline significantly associated with higher emotional eating of adolescents. The model fitted the data well for all reporters.

Multi-group analyses revealed no significant differences in associations between modelling and parenting factors on adolescents’ emotional eating, and no different associations between modelling and parenting variables on adolescents’ emotional eating (results available from the first author).

**Rater differences**

Although there were significant associations between parent and adolescent reports of parenting, these associations were generally low (Table 1). Average scores differed between parents and adolescents. Both older and younger adolescents had lower scores on support and behavioural control than their parents and higher scores on psychological control than their mothers (all $p < 0.001$).

**Discussion**

The current study is one of the first to focus on the role of parental emotional eating and parenting practices in adolescent's emotional eating behaviours using data of fathers and mothers as well as two adolescents from each family. The findings showed that higher levels of emotional eating by parents were related to higher levels in adolescents' emotional eating. Interestingly, these associations did not differ according to sex of the adolescents. Adolescents’ reports of low maternal support and of high psychological control for younger adolescents and high behavioural control for older adolescents were associated with higher levels of emotional eating.

We found moderate correlations between adolescents’ and parents’ emotional eating; these results suggest a modeller effect, thus a direct effect of parents’ emotional eating on their adolescents’ emotional eating which is in line with a previous study that reported moderate correlations in emotional eating between parents (mainly mothers) and adolescents (mainly girls) (Brown & Ogden, 2004). Interestingly, in the present study the associations in emotional eating did not differ between fathers and mothers, or by sex of the child. This is in contrast to Blissett et al. (2006) who suggested that parental extrapolation of weight concerns may be more likely to occur within the mother–daughter and father–son relationships. Alternatively, one could argue that mothers are usually the most important caregivers and their eating behaviours would affect adolescents more than their fathers’ eating behaviours. However, the present study indicates the role of fathers’ eating behaviours and the importance of including them in family studies on eating behaviours. Recently, a genetic component has been found for emotional eating (Tholin, Rasmussen, Tynelius, & Karlsson, 2005). Families share genes and environment, and it should be noted that our full-family design cannot distinguish between the effects of these two factors. Future research should employ a genetic informative design (such as a twin or adoption design) to disentangle modelling from heritability effects.

Regarding the role of parenting practices in adolescent emotional eating, we did not find a consistent pattern for all reporters. Higher maternal support was associated with lower emotional eating in younger adolescents, while higher psychological control was associated with higher emotional eating in younger and older (trend) adolescents. Unexpectedly, perceived maternal behavioural control was associated with higher emotional eating in older adolescents. Our study is not the first to examine different types of parental control and to criticize measurements of such control in previous research. Ogden, Reynolds, and Smith (2006) stated that research on parental control is confusing and uses a narrow conceptualization of the ways in which parents control what and when their children eat. Parental control may be more complex than previously assumed and different forms of control may influence different areas of eating behaviour (Ogden et al., 2006). In a review, Faith et al. (2004) concluded that, compared to measurement in which maternal feeding restrictions were explicitly assessed, measures of global parental feeding styles (including controlling efforts) did not seem to be sensitive enough to detect associations between parental behaviours and children’s weight (Faith et al., 2004). Questionnaires used in studies on food-specific control and children’s weight or food intake address many different constructs of control that include both monitoring and more psychological
control items (Brown & Ogden, 2004; De Boudeaudhuij, 1997; Saelens, Ernst, & Epstein, 2000). Our findings suggest it is essential to establish not only whether parents control at all but also how they enforce control. Future studies on parenting and (disordered) eating behaviours would benefit from using scales that discriminate between the different dimensions of control.

Important to mention also is that in multi-group analyses we found no differences between boys and girls in the way their emotional eating was associated with the emotional eating and parenting of their father and mother. Also, no parenting effects were found for fathers, although there were trends in the expected directions for their support and psychological control.

**Multisource data**

The discrepancy in results based on parent or adolescent reports can either be the result of biased answers by the children or by the parents (Engels, Finkenauer, Meeus, & Dekovic, 2001). Parents might be more susceptible for social desirability, which is underlined by higher average scores on support and behavioural control and lower average scores on psychological control for parents than for adolescents. On the other hand, the shortcoming of using exclusively adolescent reports is that correlations between concepts with adolescents’ reports exclusively are subject to shared rater bias (i.e. associations are significant because an individual reports on both dependent and independent variables). Furthermore, parents and adolescents might interpret questions differently, or can have different perceptions of the parenting practices. For example, some adolescents may not perceive all behaviours of parents, which are meant to be supportive, as support. This is an important point to consider when translating research outcomes into practical implications for parents.

**Strengths and limitations**

Our study consisted only of intact families with both biological parents living together. Additionally, although the sample was nationwide it is not representative for the general Dutch population. The results cannot be generalized for other family compositions such as, for example, single-parent families. Further, the relative under-representation of ethnic minorities does not allow generalizing to these groups.

Another limitation of our study is that the data are cross-sectional, while longitudinal data are necessary to generate conclusions about the direction of the associations. In young adolescents scores on emotional eating are generally low and problematic patterns of emotional eating might develop later in life. Also, the relationship between emotional eating and weight status, unlike in adults, has not been found in adolescents, although emotional eating was positively related to energy intake (Wardle et al., 1992). However, dietary habits acquired in childhood are known to persist through adulthood. A longitudinal design that also includes weight status and food intake can provide insight into the impact of parental influences on emotional eating and future health and wellbeing. In such a design also bi-directional influences between parents and adolescents could be tested; i.e. whether the whether parents’ level of support and control is a reaction to the child’s behaviour (i.e. emotional eating) or whether the child’s eating behaviour is influenced by certain parental behaviours.

This study also has a few strengths, in particular the large sample and full-family design with multi-informant data. Many studies focus exclusively on adolescent girls. Further, besides the lack of research on adolescent boys, the role of fathers is largely neglected in research on family factors in food intake and eating behaviours. In conclusion, similarities in emotional eating between adolescents and their parents have clearly been shown in this study, and these were irrespective of the adolescents’ sex. Moreover, a maternal parenting style perceived as highly controlling, and especially psychological control, was related to higher levels of emotional eating, whereas the results partly supported the assumption that lower levels of maternal support are related to emotional eating.

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