

Summary

The Mediating Role of Early Maladaptive Schemas and Emotion Regulation Difficulties in the Relationship between Perceived Parenting Styles and Disordered Eating Attitudes

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Eating disorders are an important group of psychiatric disorders characterized by various impairments in thoughts and eating behaviours focusing on body and body weight. They usually have a progressive course, low response rate for treatment and high relapse rate for recovering patients and, as a worst-case scenario, they can end up with death (Agras, 2001; Fairburn & Harrison, 2003). Eating disorders includes three basic categories with different clinical symptoms, such as Anorexia Nervosa (AN), Bulimia Nervosa and Binge Eating Disorder (BED) (American Psychiatry Association, 2013). Along with the eating disorder classifications, eating attitudes is a term that has been frequently used to define the process leading to impairment in eating behaviours (Attie & Brooks-Gunn, 1989; Cordero & Israel, 2009; Owens, Hughes, & Owens-Nicholson, 2002).

When the literature on eating disorders and eating attitudes is reviewed, many factors (e.g., genetics, personality, perfectionism, early puberty, traumatic life experiences, media, low self-confidence and parental characteristics are seen as to be effective in the development and maintenance of the disorder (Button, 1990; Garner, Olmsted, & Polivy, 1983; Graber Brooks-Gunn, Paikoff, & Warren, 1994; Levine, Smolak, & Hayden, 1994; Minuchin, Rosman, & Baker, 1978; Ortaçgil, 2009). Lack of parental interest in the early years of life (e.g., care, closeness, compassion, and meeting the demand of the child) is considered as a risk factor in the development of eating disorders (Haudek, Rorty, & Henker, 1999). Nevertheless, there seems to be an extensive literature studying not only the reasons that leads to the disorder but also the factors such as maladaptive thoughts and intolerance to the emotional experience contributing to the maintenance of the disorder (Fairburn, Cooper, & Shafran, 2003). It is often emphasized that patients with eating disorders have an exaggerated, and unre-

alistic beliefs focused on their body weight and shape and controlling of them. (Fairburn, Shafran, & Cooper, 1999; Fairburn, 2008). Studies investigating maladaptive thoughts in eating disorders have shown that these people also have more severe schemas in terms of early maladaptive schema areas (Batur, 2004; Jones, Harris, & Leung, 2006; Leung, Waller, & Thomas, 1999). Moreover, in studies evaluating eating disorders related to insufficient skills of emotion regulation, it has been shown that these people have difficulties in accepting and becoming aware of their emotions (Bydlowski et al., 2005; Duenyas, 2014; Svaldi, Griepenstroh, Tuschen-Caffier, & Ehring, 2012).

On the other hand, both early maladaptive schemas and the difficulties in emotion regulation are not independent from parenting styles that are shown among the causes of eating disorders. Early maladaptive schemas develop as consequence of three factors which are early childhood experiences, child's emotional temperament and how parents meet the child's basic emotional needs (Young, Klosko, & Weishaar, 2003). It is also known that emotional regulation is one of the skills gained on basis of a secure attachment between the child and his/her first caregivers (Bowlby, 1988). In this regard, parenting styles that has been experienced are related to early maladaptive schemas and emotion regulation skills as well as eating disorders (Deas, Power, Collin, Yellowlees, & Grierson, 2011; De Panfilis, Rabbaglio, Rossi, Zita, & Maggini, 2003; Leung, Thomas, & Waller, 2000; Turner, Rose, & Cooper, 2005a; Turner, Rose, & Cooper, 2005b). The study of Deas and colleagues (2011) showed that patients with eating disorders perceived their parents as less caring and more controlling, and that these patients had higher scores on weakness, failure, and unrelenting standards schemas. Similarly, in a study investigating the ability to recognize emotions and parenting styles

in individuals with eating disorder, it was determined that perceiving low levels of interest from mother was a variable explaining alexithymia and the difficulty in recognizing feelings (De Panfilis, Rabbaglio, Rossi, Zita, & Maggini, 2003). In this respect, it can be said that a few studies have separately investigated the mediator effect of early maladaptive schemas (Deas, Power, Collin, Yellowlees, & Grierson, 2011; Turner, Rose, & Cooper, 2005a) and emotion regulation difficulties (Taube-Schiff, Van Exan, Tanaka, Wnuk, Hawa, & Sockalingam, 2015; Van Durme, Braet, & Goossens, 2014) in the link between perceived parenting styles and eating disorder. However, no study has been found in the literature evaluating eating attitudes and early parenting experiences as well as early maladaptive schemas and difficulties in emotion regulation.

In this study, it is aimed to investigate the relationship between disordered eating attitudes and perceived parenting styles, early maladaptive schemas and difficulties in emotion regulation in a sample of young women who are known to have a high risk of eating disorders. More specifically, the study examines the mediator role of the difficulties in emotion regulation and schemas, thought to be a consequence of the relationship with parents in early period of life, on the relationship between perceived parenting styles and disordered eating attitudes.

Method

Participants

The sample of this study consisted of 773 female university students aged between 17-35 ($M=20.90$, $SD=2.50$). Participants were recruited from different faculties and departments of Ege University in Turkey.

Measures

The Eating Attitudes Test (EAT).

The EAT is a self-report questionnaire developed by Garner and Garfinkel (1979) for the purpose of examining attitudes and disorders related to the eating. Participants responded to 40 items on a 6-point Likert type scale. Higher scores indicate the absence of abnormal eating. Turkish adaptation of the inventory was done by Savaşır and Erol (1989). The internal consistency coefficients were reported as .70 while the current study found Cronbach alpha as .73.

Young Schema Questionnaire-Short Form 3 (YSQ-SF3).

The 90-item scale measures 18 early maladaptive schemas (EMS) which have been developed due to the child's early unmet needs (Young, 1999). Items of the inventory are rated on a 6-point Likert type scale. Higher

scores of the each schema indicate the severity of that schema characteristic. Turkish adaptation of the inventory was made by Soygüt, Karaosmanoğlu and Çakır (2009). Turkish version of the YSQ-SF3 presented 14 schemas that its internal consistency varied between .63 and -.80. In this study, internal consistency of EMS was found between .68 and -.83.

Young Parenting Inventory (YPI).

The YPI was developed by Young (1994) within the framework of Schema Therapy. Participants responded 72 items on a 6-point Likert type scale for both mother (YPI-M) and father (YPI-F) in two parts. Higher scores of YPI show the negative perceptions of the parenting style for each parent. Soygüt, Çakır and Karaosmanoğlu (2008) conducted the validity and reliability studies of the Turkish version of the YPI. In the original study, the internal consistency was reported between .53 and -.86 for mother and, .61 and -.88 for father. In this study, Cronbach alpha of internal consistency of mother parenting styles was found between .33 and -.87, and the overall internal consistency coefficient of Young Parenting Inventory Mother Form (YPI-M) was found .90. On the other side, Cronbach alpha of internal consistency of father parenting styles were found between .30 and -.92, while the overall internal consistency coefficient of Young Parenting Inventory Father Form (YPI-F) was found .92.

Difficulties in Emotion Regulation Scale (DERS).

The DERS is a self-report questionnaire that measures difficulties in the ability to regulate emotions, developed by Gratz and Roemer (2004). Participants responded 36 items on a 5-point Likert type scale. Higher scores on DERS indicate the problems in regulating emotions. Turkish adaptation of the inventory was conducted by Rugancı and Gençöz (2010). The Turkish version of the DERS has 6 subscales (i.e. nonacceptance of emotional responses, difficulty engaging in goal-directed behaviour when distressed, impulse control difficulties when distressed, lack of awareness of emotions, limited access to strategies for regulation, lack of emotional clarity) which are the same with the original study. In the Turkish version of the DERS, the internal consistency was reported as ranging from .75 to -.90 and the overall internal consistency coefficient of DERS was found .94. In this study, Cronbach alpha of internal consistency of DERS was found between .57 and -.88. while the overall internal consistency coefficient of DERS was found .92.

Procedure

After the approval was taken from the Ethical Committee of Ege University, instruments of the present study were given to the female students in various faculties and departments of Ege University. They voluntarily attended

to the study in a class setting. Due to the confidentiality principle, no personal information was asked. Participants filled out the instruments in approximately 40 minutes.

Analysis of Data

Data were analyzed by using SPSS 17. First of all, participants' ($N = 773$) mean score ($M = 15.07$) and standard deviation ($SD = 8.63$) of Eating Attitudes Test (EAT) over the total score were determined. Those who scored 1 standard deviation below the mean score of EAT were classified as "non-risk group" ($n = 80$), and those who scored 1 standard deviation above the mean score of EAT were classified as "risk group" ($n = 92$). Some of the analysis were carried out through a sample of 172 participants (include only risk group and non-risk group). In an attempt to meet the assumptions of normality and homogeneity for variables in each group, necessary transformations were made. Multivariate analysis of variance (MANOVA) was used to determine whether groups with and without eating disorders differed in terms of perceived parenting styles, early maladaptive schemas and difficulties in emotion regulation in the sample consists of 172 participants.

Hierarchical regression analysis was applied to data including all 773 participants in order to determine the predictive power of the variables on eating attitudes, and Pearson Correlation analysis were conducted to determine the relations between the variables. Finally, based on the hierarchical regression analysis, the mediating role of variables was determined by using the Bootstrapping method (Multiple Mediation Model; Preacher and Hayes, 2008) in the sample of all participants ($N = 773$).

Results

Variables that Discriminate between Risk Groups and Non-risk Groups in terms of Eating Disorders

In order to understand whether groups with and without eating disorders differed in terms of perceived parenting styles, early maladaptive schemas and difficulties in emotion regulation, three separate multivariate analysis of variance (MANOVA) were conducted. MANOVA results indicated significant differences between groups both in perceived maternal and paternal parenting styles ($F_{2,169} = 34.69, p < .001$, Wilks's $\lambda = 0.70$, partial $\eta^2 = .29$); early maladaptive schemas ($F_{14,157} = 7.83, p < .001$, Wilks's $\lambda = 0.59$, partial $\eta^2 = .41$) and emotion regulation difficulties ($F_{6,165} = 9.98, p < .01$, Wilks's $\lambda = 0.73$, partial $\eta^2 = .27$). Univariate analysis with Bonferroni adjustment were conducted to find out the group (with and without eating disorders) effects on variables of the study as a result of which, accepted

alpha levels were differed for all dependent measures. According to the Bonferroni adjustment results, levels of significance values were considered as $p < .025$ for perceived parenting styles; as $p < .003$ for early maladaptive schemas; and as $p < .008$ for difficulties in emotion regulation. The post hoc analysis with Bonferroni adjustment revealed that the risk group of eating disorders scored significantly higher in both negative perceived maternal parenting, ($F_{1,170} = 66.20, p < .001$, partial $\eta^2 = .28$) and negative perceived paternal parenting ($F_{1,170} = 40.33, p < .001$, partial $\eta^2 = .19$) compared to non-risk eating disorder-group. As compared to non-risk group, results also showed that the risk group had a significantly higher scores in all schemas of EMS, namely social isolation/mistrust, $F_{1,170} = 58.10, p < .001$, partial $\eta^2 = .22$; abandonment, $F_{1,170} = 46.19, p < .001$, partial $\eta^2 = .21$; vulnerability to harm or illness, $F_{1,170} = 42.91, p < .001$, partial $\eta^2 = .20$; punitiveness, $F_{1,170} = 39.75, p < .001$, partial $\eta^2 = .19$; approval-seeking, $F_{1,170} = 33.79, p < .001$, partial $\eta^2 = .17$; self-sacrifice, $F_{1,170} = 31.94, p < .001$, partial $\eta^2 = .16$; pessimism, $F_{1,170} = 29.00, p < .001$, partial $\eta^2 = .15$; emotional deprivation, $F_{1,170} = 28.53, p < .001$, partial $\eta^2 = .14$; enmeshment/dependency, $F_{1,170} = 23.63, p < .001$, partial $\eta^2 = .12$; unrelenting standards, $F_{1,170} = 22.70, p < .001$, partial $\eta^2 = .12$; entitlement/insufficient self-control, $F_{1,170} = 20.73, p < .001$, partial $\eta^2 = .11$; emotional inhibition, $F_{1,170} = 21.93, p < .001$, partial $\eta^2 = .11$; failure, $F_{1,170} = 12.99, p < .001$, $\eta^2 = .07$; and defectiveness, $F_{1,170} = 18.51, p < .001$, partial $\eta^2 = .10$; and finally all subscales of emotion regulation difficulties; goals, $F_{1,170} = 22.22, p < .001$, partial $\eta^2 = .12$; strategy, $F_{1,170} = 40.48, p < .001$, partial $\eta^2 = .19$; acceptance, $F_{1,170} = 38.06, p < .001$, partial $\eta^2 = .18$; clarity, $F_{1,170} = 14.08, p < .001$, partial $\eta^2 = .08$; impulse, $F_{1,170} = 31.44, p < .001$, partial $\eta^2 = .16$. There were no significant group differences in awareness subscales of DERS, $F_{1,170} = .58, p > .05$, partial $\eta^2 = .00$.

Predictor Variables of Eating Attitudes

A three-stage hierarchical regression analysis was conducted to determine the predictive power of the perceived maternal and paternal parenting style, early maladaptive schemas and difficulties in emotion regulation on eating attitudes with a total sample of 773 participants. Pearson Correlation Analysis was run in order to look at the relationships between the variables. There were significant positive correlations between all of the dependent variables and the eating attitudes ($p < .01$). For this regression analysis, perceived parenting styles of mother and father were entered in the first step. In the second step, 14 early maladaptive schemas and in the third step, difficulties in emotion regulation total score were entered into the regression equation.

Results of hierarchical regression analysis showed that among the first block variables only the perceived mother parenting style was significant in the equation and explained 7% of the variance ($R^2 = .07$, $F_{2,731} = 25.64$, $p < .001$); fourteen early maladaptive schemas were entered in the second step; among those, emotional deprivation, self-sacrifice, vulnerability to harm/illness and unrelenting standards were found as significant predictors of eating attitudes and explained 17% of the variance ($R^2 = .17$, $F_{14,717} = 9.04$, $p < .001$). At this step, the significant effect of the perceived maternal parenting style disappeared. At the last step, emotion regulation difficulties total score was entered into the equation and produced a significant increase in the accounted variance ($R^2 = .18$, $F_{1,716} = 8.95$, $p < .001$). In the final model, the significant predictors of eating attitudes were emotional deprivation, self-sacrifice, unrelenting standards and emotion regulation difficulties that these variables accounted for the 18% of the total variance.

The Mediating Role of Early Maladaptive Schemas and Difficulties in Emotion Regulation in the Relation between Negative Perceived Maternal Parenting Style and Eating Attitudes

Finally, based on the hierarchical regression analysis, in order to understand the mediating effect of the variables on the relationship between perceived mother parenting style and eating attitudes, Bootstrapping method (Multiple Mediation Model; Preacher & Hayes, 2008) was implemented to a total sample of 773 participants. Baron and Kenny (1986) outlined steps of testing a mediational model were as follows: a) negative perceived maternal parenting style had a direct significant effect on eating attitudes ($\beta = .06$, $t = 6.90$, $p < .001$); b) negative perceived maternal parenting style had a direct significant effect on emotional deprivation ($\beta = .06$, $t = 12.91$, $p < .001$), self-sacrifice ($\beta = .04$, $t = 7.27$, $p < .001$), unrelenting standards ($\beta = .03$, $t = 6.33$, $p < .001$) and difficulties in emotion regulation total score ($\beta = .23$, $t = 10.91$, $p < .001$); c) the mediating variables of emotional deprivation ($\beta = .24$, $t = 3.21$, $p < .01$), self-sacrifice and emotion regulation total score ($\beta = .07$, $t = 4.44$, $p < .001$) had a significant direct effect on eating attitudes; d) after controlling the mediating variables, previously observed relationships between negative perceived maternal parenting style and eating attitudes were no longer significant ($\beta = .02$, $t = 1.71$, $p > .05$). Therefore, it can be said that the schemas of emotional deprivation, self-sacrifice, unrelenting standards and emotion regulation difficulties have a full mediating effect on this relationship. The significance of this effect was investigated by using 1000 bootstrap sampling, as recommended by Preacher and Hayes (2008). According to this method, if the

95% CI does not include "0", then the effect is accepted as significant with $p < .05$. The total indirect effect of the mediators were significant (point estimate = .05 and 95% BCa CI [.0347, - .0599]). In addition, the specific indirect effect of variables were also significant; emotional deprivation (point estimate = .02 and 95% BCa CI [.0052, - .0238]), self-sacrifice (point estimate = .01 and 95% BCa CI [.0040, - .0165]), unrelenting standards (point estimate = .01 and 95% BCa CI [.0018, - .0127]) emotion regulation difficulties (point estimate = .02 and 95% BCa CI [.0098, - .0243]).

Discussion

In this study, it was found that the risk group for eating disorders perceived more negative parenting from both mother and father than non-risk group. In childhood, when the parents have negative parental attitudes such as overprotectiveness, authoritativeness, punishment etc., it is suggested that disrupted eating patterns frequently develop as a way of controlling the environment (Waller & Calam, 1994). It is stated that in the families where extreme rules are set and there is no chance for the individuality, because children need an option to take risks, make mistakes and live in accordance with their actions, refusal to eat occurs frequently (McDowell & Hostetler, 1996). As a result, it is thought that they resort inappropriate eating activities to block the negative emotions created by negative parenting experience.

Another finding in the study is that the risk group for eating disorder has a higher score in all of the early maladaptive schemas. As a matter of fact, studies investigating the relationship between early maladaptive schemas and eating disorders showed that the individuals with eating disorders have more intense schema beliefs than normal sample (Jones, Leung, & Harris, 2006; Leung, Waller, & Thomas, 1999; Waller, Ohanian, Meyer, & Osman, 2000). It is believed that excessive eating or controlling eating behaviours help individuals to escape from the unbearable emotions caused by the act of schemas (Sheffield, Waller, Emanuelli, Murray, & Meyer, 2009).

It has been found that the risk group for eating disorders have more difficulties in understanding and accepting their feelings, controlling their impulses, setting purposes and developing strategies as compared to non-risk group in this study. A similar study conducted by Svaldi and colleagues (2012) revealed that patients with an eating disorder have more difficulties in emotion regulation in many aspects as compared to normal sample. However, interestingly, the current study found that the difficulty in awareness of emotion was the only emotion regulation difficulty dimension that did not differ in

both groups with and without the risk. It is thought that patients with eating disorders primarily have problems related to awareness of emotion that they experienced (Bydlowski et al., 2005). However, Van Strien, Engels, Van Leeuwe, and Snoek (2005) found that the lack of inner awareness is associated with only eating behaviour from disrupted eating behaviours. In this case, the reason of the unexpected result may be that the risk group does not have an emotional eating pattern. Nevertheless, the types of eating disorders are not investigated in this study that it is not possible to make a clear conclusion in this regard.

In this study, based on the theoretical knowledge, a three-stage hierarchical regression analysis was also conducted to determine the predictive power of the negative perceived maternal parenting style and negative perceived paternal parenting style (first step), early maladaptive schemas (second step) and difficulties in emotion regulation (third step) on eating attitudes. Results of hierarchical regression analysis showed that among the first block variables, only the negative perceived maternal parenting style was significant. At the second step, the significant effect of the negative perceived maternal parenting style disappeared when the schemas were entered. At the third step, difficulties in emotion regulation was entered the model. As a result of the analysis, it was seen that emotional deprivation, self-sacrifice and unrelenting standard schemas and difficulties in emotion regulation explained the eating attitudes meaningfully. Emotional deprivation, self-sacrifice and unrelenting standard schemas, which were found as significant contributors in explaining eating disorders in this study, were often associated with eating disorders in the literature. Leung, Thomas and Waller (2000) argued that anorexic women believe that their emotional needs can never be met and so they believe they should sacrifice their own needs. It is also known that people with anorexia have strict rules about their appearance, and that they show efforts such as excessive diet and intense exercise in order to reach the unrelenting standards they set for themselves (Shafraan, Cooper, & Fairburn, 2002). In Cooper, Rose, and Turner's (2005) study investigating the relationship between schemas and eating habits at the item level, it was found that the only highest scored items associated with eating disorder belonged to the unrelenting standard schemas when depression scores were controlled. The unrelenting standards schema is thought to be a discriminating variable in terms of eating disorder. At the same time, as it was found in this study, the difficulties in emotion regulation has been revealed many times as a significant predictor of eating disorder (Lavender & Andersen, 2010; Whiteside, Chen, Neighbors, Hunter, & Larimer, 2007). At this point, it can be said that the results are consistent with the literature.

Based on the hierarchical regression analysis results, the mediator role of emotional deprivation (ED), self-sacrifice (SS) and unrelenting standards (US) schemas on the relationship between negative perceived parenting style of mother and eating attitudes were also investigated in this study. The results showed that the negative perceived parenting style of mother had a direct effect on the eating attitudes but that this effect disappeared when emotional deprivation, self-sacrifice, unrelenting standard schemas and emotion regulation difficulties were controlled, that is, these variables had full mediating effect. The negative perceived parenting style of the mother explained the disturbances of the eating pattern through early maladaptive schemas and difficulties in emotion regulation. More precisely, it can be said that the early maladaptive schemas of emotional deprivation, self-sacrifice, unrelenting standard and the difficulties in emotion regulation act as a bridge between childhood negative maternal parenting experiences and eating disorders. In other words, the bonds that carry the negative maternal parenting to eating disorder can be sorted as the beliefs that she will be left emotionally alone just like her mother did, she can be loved only if she sacrifices her wishes and she reaches high standards just like her mother expected. In addition to all these beliefs, emotion regulation failure is also contributor to these bonds. In the literature, there is no study investigating the role of early maladaptive schemas and emotion regulation difficulties as mediator in the relationship between negative perceived maternal parenting and eating disorders. However, there are studies assessing the mediator role of these variables separately on the relationship between attachment / parenting style of the mother and the eating disorder. Van Durme, Braet and Goossens (2014) found that incompatible emotion regulation was partially mediating the link between insecure attachment with mother and eating pathology. The findings of Leung, Thomas and Waller (2000), in which early maladaptive schemas were evaluated in the clinical sample, are consistent with the results of the present study. Although this study did not evaluate the mediating effect of emotional deprivation and unrelenting standards schemas, it was shown that these two schemas were predicted by low maternal care in people with anorexia nervosa. In addition, defectiveness and emotional inhibition schemas were clarified by low maternal care. The inadequate interest of mother was also a variable explaining emotional deprivation schema for women with bulimia nervosa. The findings of this study were interpreted in a way that women with anorexia develop a belief that they are genetically defective and they set hard to reach standards to themselves when the perceived level of interest of mother is low. At the same time, it was mentioned that these individuals devel-

op a belief that their emotional needs would never met and for this reason they should never show their feelings.

In conclusion, when the findings of the study are taken into account, the variables differentiated between risk and non-risk group of eating disorder should be taken into consideration in the treatment of eating disorders. In this context, it is important to focus on whether the patient's inappropriate eating attitude does not originate from a retaliatory attitude towards the parent or an attitude towards meeting the expectations of the parent (e.g. to become a thinner and acceptable individual). These can be the source of the patient's resistance to treatment, especially in the treatment models where the parents are

involved. Although it is no longer possible to change the already experienced parenting behaviours, it is thought to be very useful to study areas such as early maladaptive schemas and emotion regulation difficulties that help to sustain their effects.

One of the limitations of this study was that the sample did not consist of people who were clinically diagnosed with an eating disorder. For this reason, this study should be repeated in a clinical sample that has been diagnosed with an eating disorder. Besides, it is suggested that in addition to early maladaptive schemas, the strategies of coping with schemas can be examined in future studies.