**Negative and Positive Emotions as Mediators between Early Childhood Relationships with Parents to Binge Eating Addiction: An** **Expansion of the Escape from Negative Emotions Theory**

**Introduction**

Binge eating disorder (BED) is clinically considered to be the most prevalent eating disorder, with a global pooled prevalence of 0.9% (Erskine & Whiteford, 2018). It is estimated to occur in women twice as frequently as in men (Cottone et al., 2019). It is characterized by recurrent, distressing episodes of binge eating, but without the inappropriate compensatory behaviors of bulimia nervosa (BN), according to the American Psychiatric Association (2013).

Given the prominent psycho-behavioral similarities that exist between chronic binge eating and drug abuse, it is accepted that an apparent dependence on highly palatable food, accompanied by marked emotional and social distress and deficiency is, in essence, an addiction disorder (Davis, 2013). Most previous studies have highlighted the nutritional and behavioral aspects of this disorder (Munsch et al., 2019; Wagner et al., 2016). While a few empirical studies have investigated the mental etiology behind eating disorders in general (Cristina et al., 2020; Hricova et al., 2020), empirical knowledge about the mental etiology behind this particular type of addiction is almost non-existent. ‏

Thus, the primary aim of this study was to investigate correlates between early childhood relationships with parents to the BED pathology. This population for this study consisted of Israeli Jewish adult women. A previous study (Authors, 2020) conducted in Israel examined the contribution of personality and environmental resources, such as maturity of mental defense mechanisms and social support, to binge eating addiction (BEA) among women who reported suffering from psychological abuse in their intimate relationships. In addition to the correlations found between personality and environmental resources with BAE, the defense mechanisms and their maturity classification were found to moderate the correlation between the stress of psychological abuse and addictive binge eating (Authors, 2020). That is, women try to escape the violent reality in which they live through addictive binge eating, according to the maturity of the defense mechanism they use.

Based on the understanding that BEA is related to personal and environmental characteristics and that binge eating may be a way to try to escape an unbearable reality, the model used in the current research tested components of the escape theory of binge eating (Heatherton & Baumeister, 1991). It integrated, for the first time, escape from negative emotions and the addiction component of BED.

According to escape theory, individuals engage in binge eating as a mean of lowering their self-awareness related to pressures, threats and long-term concerns. Individuals who tend to have high expectations of themselves often experience difficulty in achieving the unrealistic goals they set (Heatherton & Baumeister, 1991). When they fail to achieve their goals, they experience negative emotions (Higgins, 1987) from which they are motivated to escape. Thus, negative affect is proximal to binge eating (Heatherton & Baumeister, 1991).

Negative emotions, such as anger, guilt, fear, and nervousness, are associated with unpleasant feelings and obsessive moods (Diener et al., 2003). A recent review (Dingemans et al., 2017) and research (Sultson et al., 2017) stated that negative emotions and maladaptive emotion regulation strategies play a major role in the onset and perpetuation of BED. While escape theory focuses on negative emotions, the current research adds a relatively new aspect, as it examines the other dimension of the emotional system: positive emotions**.** Positive emotions reflect the degree to which one feels enthusiasm, vigor and alertness, and is characterized by a state of high mental energy, concentration and pleasure (Diener et al., 2003). Little is known about the influence of positive emotions on binge eating behaviors (Mason et al., 2021; Sultson et al., 2017). Sultson et al. (2017) examined a scale for positive and negative emotional eating to assess its predictive validity, and found that positive affect could also elicit overeating (Sultson et al., 2017). Smith et al. (2018) reviewed studies (Bongers et al., 2013; Emery et al., 2014) on the association between positive affect and binge eating that yielded contradictory findings. Positive emotions were related to higher overall restraint intention, but were not related to binge eating. A recent study (Mason et al., 2021) argued that the low levels of positive affect may contribute to the onset and maintenance of BED.

The present study attempts to bridge this gap in the literature. In addition to extending the escape theory model to include the aspect of positive emotions, the present study corresponds with the study of Higgins Neyland and Bardone-Cone (2017) who examined the escape theory of binge eating among Latina women. They proposed a model asserting that distress in three dimensions: personal, familial and environmental, causes a woman to feel as if she does not live up to acceptable standards. In response, feelings of depression and anxiety arise and she feels the need to reduce these feelings through eating.

Based on the theoretical model of Higgins Neyland and Bardone-Cone (2017), we propose that stressful experiences in various family relations (parental empathy and intrusiveness) experienced in early childhood could remind one of the ways in which women do not comply, and these experiences are likely to invoke a strong negative reaction (e.g., depression, anxiety; see Heatherton & Baumeister, 1991). In response to the negative reaction, a woman may seek to reduce her self-awareness of these stressful experiences, and this may motivate binge eating.

Relating to Aristotle's quote “Give me a child until he is seven and I will show you the man” emphasizing the importance and influence of early childhood on long-term outcomes, we chose the independent variables of mother’s and father’s empathy and intrusiveness in early childhood to represent ego-threatening stressors that may play a role in the context of escape theory. As in the original work of Higgins Neyland and Bardone-Cone (2017), we tested these variables in separate mediation models in order to investigate total, direct, and indirect effects on binge eating and to examine which relevant stressors may fit in an escape theory model.

Many psychophysiological processes and abilities are involved in the formation of parental behaviors (Feldman, 2016), and capacity for empathy is a core component of parenting, especially during early childhood (Decety & Svetlova, 2012). Empathy is a complex and multidimensional ability, composed of affective and cognitive aspects (Shamay-Tsoory et al., 2009), which enable people to perceive and understand others’ affective states, and which motivates helping behaviors (Decety & Svetlova, 2012). Empathy allows primary caregivers to be flexible in response to the needs of their children (Rilling, 2013). Empathy emerges in early childhood and become more complex during the individual’s development ([Eisenberg et al., 2013](https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6610578/#B18)). Lack of empathy is related to clinical conditions that involve social impairment and aggression, such as conduct disorder and disruptive behavior disorder (De Wied et al., 2010). Lack of empathy results in a deficiency in experiencing fear and guilt, which, in normally developing individuals, inhibit people from acting on violent impulses (Davidson et al., 2000).

Intrusive parentingrefers to the degree to which the parent interferes with the child’s needs, interests, or behaviors, above and beyond the developmental or safety needs of the child, such as unnecessarily restraining the child, consistently disrupting the child’s efforts with his or her own bids for attention, or verbally controlling the child with repeated and unnecessary direction (Egeland et al., 1993). Intrusiveness can undermine children’s autonomy and confidence and has been linked to negative child outcomes, including regulatory and socio-emotional problems (Arslan et al., 2021; Barnett & Scaramella, 2017). A recent study (Wu, 2021a) found a higher initial level of maternal intrusive parenting predicted a faster increase of fear among infants (Wu, 2021b).

Regarding the correlation between the parents’ attitude and children’s approach to eating, a study that examined the quality of family relationships as protective factors against eating disorders found that by increasing the values from the parents’ caring style scale the probability for subjects to fall into the high-risk group decreases (Lampis et al., 2014). In addition, women who scored highly on the Invalidating Childhood Environments scale had greater levels of eating disturbance (Mountford et al., 2007). Regarding the relationship with the mother,a review study (Sherkow et al., 2009) claimed that children examine and internalize the behaviors of a mother with eating disorders. The children in the study exhibited behavior mimicking the defense mechanisms and pathological symptoms of the mother. The researchers concluded that children's eating behavior is the result of an interaction between innate pre-dispositions and environmental influences, the latter producing a secondary transmission of the eating disorder (Sherkow et al., 2009). Hostile-dependent conflicts and ambivalent struggles for autonomy from the mother may persist life-long in women and are all too easily acted out via abnormal control of food intake and body shape (Beattie, 1988). Similarly, young adolescents with BED reported significantly higher levels of perceived maternal criticism, emotional over-involvement, and lower levels of perceived warmth than was reported by the control group (Schmidt et al., 2015). To the best of our knowledge, no study to date examined the correlations between mother’s empathy and intrusiveness in early childhood and addiction to binge eating among adult women.

As to the specific influence of the father's attitude on pathological eating behavior, Pace et al. (2012) surveyed 233 female college-age students and found that binge eating symptoms tended to be lower among those who reported higher levels of father’s care during childhood. Gonçalves et al. (2019) found the role of father’s invalidation in the BEDs spectrum to be highly significant. Participants who perceived their fathers as invalidating presented higher eating psychopathology and difficulties in the experience of intimate relationships. Eating pathology that seems to emerge in the context of childhood paternal invalidation may be understood as an inadequate strategy to regulate emotions such as fear of abandonment and anxiety (Gonçalves et al., 2019).

The model of negative emotions as mediators between childhood maltreatment and subsequent substance and alcohol use disorders was extensively researched (Shin et al., 2019; Wolff et al., 2016). Emotion dysregulation was found to be a potential mechanism underlying the relationship between early emotional and physical maltreatment and the development of later substance and alcohol abuse.

**Methods**

The novelty of this study, as mentioned, is in being the first to integrate the escape theory from negative emotions (Heatherton & Baumeister, 1991) and the addiction component of BED. The combined examination of positive and negative emotions in this context is also innovative.

Through this integration, we offer a new perspective on women's mental state and ability to cope with ego-threatening stressors that generate negative emotions in the hopes of identifying relevant points of intervention for women who binge eat. We hypothesized (H1; H2; H3) that negative and positive emotions mediate the association between early childhood relationships with the mother and father (level of empathy and level of intrusiveness) and binge eating addiction.

Mediation models test the escape theory of binge eating using: Early Childhood Mother's Empathy (ECME), Early Childhood Mother's Intrusiveness (ECMI), Early Childhood Father's Empathy (ECFE), and Early Childhood Father's Intrusiveness (ECFI).

Hypotheses 1

Negative emotions

The addiction to binge eating

Early childhood mother's empathy

Positive emotions

Hypotheses 2

Negative emotions

Early childhood mother's intrusiveness

The addiction to binge eating

Positive emotions

Hypotheses 3

Negative emotions

The addiction to binge eating

Early childhood father's empathy

Positive emotions

Hypotheses 4

Negative emotions

Early childhood father's intrusiveness

The addiction to binge eating

Positive emotions

**Participants and Procedure**

All participants in this study were Jewish-Israeli women. 820 participants with eating addictions were recruited through support groups such as Overeaters Anonymous, Grey-Sheet and Facebook groups for women with binge eating disorders. The application included a basic introduction to the research and an explanation of the questionnaires, as well as an offer to participate in a lottery for a voucher to buy clothes (worth 500 New Israeli Shekels). All the questionnaires were completed online. The code of ethics for studies examining public spaces on the internet (Eysenbach & Till, 2001) was used to ensure confidentiality.

The order of the presentation of questionnaires in the survey was not randomized. Individuals had to answer questions in certain order, but they did not have to finish the survey in one sitting—they were able to start it and complete it at a later time. Additionally, they were told they could stop their participation at any point. In case of distress caused by the questionnaires, the women were invited to contact the researchers for guidance and help. Two women contacted the author and received guidance in seeking psychotherapy.

630 women were included in the final sample, after questionnaires that did not meet the inclusion criterion for participation in the study or that were not fully completed were rejected.

The mean age of women in the sample was 42.7 years, SD = 11.4. The majority of the women were in intimate relationships (71%), most of them were married (54.5%). The majority of the women had an academic education (full 53%, partial 12%). More than half (57%) worked full time, 20% did not work. Of those who work, 44% reported that they enjoy their work. The economic status of these women varies: 55% reported to be in average status whereas only 6.6% reported to be in a very high economic status. 1.6% claimed to be in a low status. Most of the women were non-religious (66%), 0.1% were ultra-orthodox.

We asked the women to assess their weight. 580 (92%) reported that they are overweight, among them 140 (22%) reported to be obese. We also asked for their actual weight and height to assess their Body Mass Index (BMI). We found that the mean BMI was 33.6 kg/m2, SD = 6.3 kg/m2 with a range of 20-64 kg/m2. The women were asked about their physical activity and treatments relegated to their weight issue. 165 women (27%) reported that they are physically active 2-7 days a week on a regular basis, whereas the rest (73%) reported that they seldom or never workout. 170 women reported they take mood-altering drugs now or have in the past (16% now, 10% in the past) whereas 72% did not and never had. 264 women reported having undergone psychotherapy, 243 women reported they have been treated by a dietitian, 167 were participating in weight support groups, 93 were a part of food addiction groups such as Overeaters Anonymous (OA) and GreySheeters Anonymous (GSA). 52 Women underwent bariatric surgery. Most of the women reported using more than one type of treatment. Only 127 reported they did not use any outside help.

**Measures**

**Addiction to binge eating.** Thiswas measured with The Yale Food Addiction Scale (Meule & Gearhardt, 2019), based on the DSM-5 diagnostic criteria substance-related and addictive disorders modified for eating behaviors. This tool is used to assess food addiction symptoms and consists of 35 items. Each item is rated on an 8-point rating scale related to symptom frequency ranging from 0 (never) to 7 (every day). A cut-off of 5 (i.e., 2–3 times per week) is used for determining whether a symptom is present. Food addictions are classified as mild (2–3 symptoms), moderate (4–5 symptoms) or severe (6 or more symptoms) (Gearhardt et al., 2016). The YFAS has demonstrated good internal consistency, as well as convergent, discriminant and incremental validity (Gearhardt et al., 2016). In this study internal consistency was excellent (Cronbach's alpha = .927).

**Positive and negative emotions.** The positive and negative affect questionnaire(Watson et al., 1988b) consists of two 10-item mood scales and was developed to provide brief measures of PA and NA. The items were derived from a principal components analysis of Zevon and Tellegen’s (1982) mood checklist. Respondents are asked to rate the extent to which they have experienced each particular emotion within a specified time period, with reference to a 5-point scale from 1 (very slightly or not at all) to 5 (very much). In the current study, the time-frame adopted was ‘in general’. The Positive Affect score was calculated by adding the scores on items 1, 3, 5, 9, 10, 12, 14, 16, 17 and 19. In this study internal consistency was excellent (Cronbach's alpha = .90). Negative Affect score was calculated by adding the scores on items 2, 4, 6, 7, 8, 11, 13, 15, 18 and 20. In this study internal consistency was good (Cronbach's alpha = .821). Higher scores represent higher levels of positive/ negative affect.

**Early relationship with the mother and the father.** Thiswas measured with the parental bonding instrument (PBI) scale. (Parker et al., 1979). This is a 25-item self-report measure designed to assess parent–child relationships using a Likert scale from 0 (very unlike) to 3 (very like). Twelve of the items are Care items (e.g., “Appeared to understand my problems and worries”), which allows for a maximum score of 36 for the Care dimension. There are thirteen Overprotection items (e.g., “Tried to make me feel dependent on him”), for a maximum score of 39 for the Overprotection dimension. Care involves a dimension ranging from parental affection, warmth and empathy (high scores) to parental coldness, indifference and rejection (low scores). Overprotection or control ranges from intrusiveness to infantilization (high scores) through to the detached promotion of independence (low scores). The PBI has good psychometric properties and is insensitive to the effects of the respondent’s mood. The test–retest reliability of the PBI has been demonstrated for intervals ranging from 3 weeks to 10 years. The test–retest correlations ranged from 0.87 for maternal care and paternal overprotection to 0.92 for paternal care, with a mean of 0.89. In this study internal consistency for the relation with the mother was very good (Cronbach's alpha = .87), and for the relations with the father was excellent (Cronbach's alpha = .92).

**Sociodemographic variables** were collected to obtain data regarding women's age, country of origin, education, economic status, health status, religiosity, employment, family status and number of children. Two questions regarding mental health were asked: "Are you taking any mood-altering drugs"? and "Have you undergone treatment? (more than one may be indicated) 1. Psychological, 2. Coaching 3. Nutritional 4. Weight control support group".

**Data Analysis**

We first examined descriptive statistics of bivariate correlations and then tested the mediation models. In order to have a more nuanced understanding of the relationships between the variables, we examined the total, direct, and indirect effects of each mediated relationship in order to determine whether mediation took place. Pathways are determined to be mediated when a significant indirect effect estimate is obtained.

**Results**

**Descriptive Analyses Correlations**

Table 1 presents the means, standard deviations, and correlations of the model variables. The variable of mother’s intrusiveness in early childhood was positively correlated with the mediator of negative affect and binge eating. That is, higher mother’s intrusiveness was associated with more negative affect and more binge eating. Mother’s and father’s empathy in early childhood were negatively correlated with negative affect, indicating that more empathy is associated with less negative affect. No significant correlation was found between father’s intrusiveness and binge eating. Finally, negative affect was positively correlated with binge eating, such that more negative affect was associated with more binge eating.

Table 1: SDCB EA

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Independent variables** | **M** | **SD** | **Binge-eating**  **addiction** | |
| Age | 42.8 | 11.4 | .001 |
| Years of marriage |  |  | -.001 |
| Children | 1.28 |  | -.035 |
| Education | 4.91 | 1.3 | .011 |
| Employment | 1.63 | .8 | .060 |
| Enjoy the work | 2.64 | 1.2 | .14\*\* |
| Financial status | 2.79 | .76 | .050 |
| Religiousness | 1.45 | .70 | .013 |
| **Negative emotions** | **32.5** | **9.0** | **.571\*\*** |
| **Positive emotions** | **25.9** | **6.3** | **-.276\*\*\*** |
| **Early childhood mother's empathy** | **30.9 (3-48)** | **9.4** | **-.270\*\*\*** |
| **Early childhood mother's intrusiveness** | **27.2 (12-47)** | **7.2** | **.246\*\*\*** |
| **Early childhood father's empathy** | **30.7 (3-48)** | **9.1** | **-.167\*\*\*** |
| **Early childhood father's intrusiveness**  p < .05. p < .01. p < .001. | **25.5 (12-47)** | **7.2** | **.095\*** |



**Mediation Models**

The mediation models described below were estimated with PROCESS macro (Hayes, 2013) in SPSS 21.0.3. We analyzed four mediation models testing the escape theory of binge eating using ECME, ECMI, ECFE, and ECFI as independent variables, and negative and positive emotions (NE, PE) as the mediators (see Figure 2 for the four models with standardized path coefficients). We used Model 4 to examine the direct and indirect relationship between the variables.

**Early childhood mother's empathy**. The mediation analysis revealed small, significant, negative indirect effects of ECME on BEA: via negative emotion (b = -.033, 95% CI [-0.49, -0.18]) and via positive emotions (b = -.004, 95% CI [-0.009, -0.0009]). Likewise, we found significant negative direct effects of ECME on BEA (β = -.43 95% CI [-0.65, -0.02]), meaning this is a partial mediation. The overall model accounted for 35% of the total variance of ECME (F (5, 611) = 67.62, p = .000). These results supported H1 indicate that ECME may have a small yet significant indirect effect on the addiction to binge eating via negative and positive emotions. High level of ECME may lead to less negative emotions, which in turn leads to a lower level of addiction to binge eating. The same pattern exists in relation to positive emotions which in also lead to a lower level of addiction.

Figure 1 presents the direct and indirect associations between the variables.

**Early childhood mother's intrusiveness.** Similar significant negative indirect effects of ECMI on BEA was found examining the mediation analysis: via negative emotion (β =.017, 95% CI [0.10, 0.23]) and via positive emotions (β =.002, 95% CI [0.005, 0.005]). Likewise, we found significant positive direct effects of ECMI on BEA (β =.45 95% CI [-0.14, -0.08]), meaning this is also a partial mediation. The overall model accounted for 35% of the total variance of ECMI (F (5, 611) = 66, p = .000). These results supported H2 indicate that ECMI may have a significant indirect effect on the addiction to binge eating via negative and positive emotions. High level of ECMI may lead to more negative emotions which in turn lead to a higher level of addiction to binge eating, and may also lead to less positive emotions which in turn lead to a higher level of addiction (see Figure 2).

**Early childhood father's empathy.** The mediation analysis revealed small significant negative indirect effects of ECFE on BEA: via negative emotion (β = -.03, 95% CI [-0.42, -0.012]) and via positive emotions (β = -.004, 95% CI [-0.01, -0.0009]). The direct effects of ECFE on BEA was insignificant (β = 0.01 95% CI [-0.01, 0.03]), which may indicate that this is a full mediation. The overall model accounted for 9% of the total variance of ECFE (F = 66 (5, 611), p = .000). These results supported H1 indicate that ECFE may have a significant indirect effect on the addiction to binge eating via negative and positive emotions. High levels of ECFE may lead to less negative emotions, which then in turn lead to a lower level of addiction to binge eating, and may also lead to more positive emotions, which lead to a lower level of addiction (see Figure 3).

**Early childhood father's intrusiveness.** The mediation analysis revealed no significant indirect effects of ECMI on BEA via negative emotion or positive emotions. Likewise, the direct effect was also insignificant. H4 was not supported (see Figure 4).

**Fig. 1**

Negative emotions

Hypothesis 1

.17\*\*\*

-.20\*\*\*

-.27\*\*\*

The addiction to binge eating

Early childhood mother's empathy

.08\*\*\*

-.051\*\*\*

Positive emotions

**Fig. 2**

Negative emotions

Hypotheses 2

.30\*\*\*

.168\*\*\*

.246\*\*\*

Early childhood mother's intrusiveness

The addiction to binge eating

-.052\*\*\*

.12\*\*\*-

Positive emotions

**Fig. 3**

Hypotheses 3

Negative emotions

-.16\*\*\*

.165\*\*\*

-.167\*\*\*

The addiction to binge eating

Early childhood father's empathy

.09\*\*\*

-.049\*\*\*

Positive emotions

**Fig. 4**

Hypotheses 4

Negative emotions

.020

.163\*\*\*

.095\*

Early childhood father's intrusiveness

The addiction to binge eating

-.049\*\*\*

.048-

Positive emotions

p < .05. p < .01. p < .001.

**Discussion**

In searching for ways to expand understanding of why women become addicted to binge eating, the primary aim of this study was to investigate correlates between early childhood relationships with parents and BEA, using a sample of Israeli Jewish adult women. The study expanded on the escape theory from negative emotions (Heatherton & Baumeister, 1991), which was tested (Loth et al., 2016; Weatherly & Cookman, 2014), by integrating the escape model with the addiction component of BED for the first time. Moreover, the current study combined examination of positive and negative emotions in this context, which is also innovative. This work is important, given the limited research related the emotional aspects and the addiction component in BED in this specific population and in general. According to the research hypotheses, we tested several novel mediation models that elucidated pathways to BEA.

Results support our first and third hypothesizes. negative emotions mediate the correlation between ECME and ECFE and the addiction to binge eating. The examination of this mediation was conducted, to the best of our knowledge, for the first time. The results state that a high level of empathy from parents in early childhood may lead to less negative emotions, which in turn lead to a lower level of addiction to binge eating. These findings are consistent with previous literature that supports a negative relationship between parental empathy and depression in children and young adults (Calandri et al., 2019; Fei et al., 2021) and a positive association between negative affect and binge eating (Goode et al., 2020; Sultson et al., 2017).

Positive emotions also mediated the correlation, demonstrating that a high level of empathy may lead to more positive emotions, which in turn lead to a low level of addiction to binge eating. These findings are partially consistent with previous literature. Support for a positive relationship between parental empathy and positive emotions in children and young adults were found in several previous studies (Calandri et al., 2019; Fei et al., 2021). However, other studies (Bongers, et al., 2013; Emery et al., 2014) found no conclusive correlation between positive emotions and binge eating. In this study, we found a small yet significant direct effect of positive emotions on decreased addiction to binge eating. This is, to our knowledge, the first empirical support for the direct beneficial effect of positive emotions on binge eating among adult Israeli women. This may have important therapeutic implications.

Affirmation of these findings and the correlation between mother's empathy in early childhood, positive and negative emotions and wellbeing in adulthood can be derived from Winnicott’s theory (1960b), according to which mother's empathy is considerable and the first of three aspects of “good enough” child-raising. First, “…proper handling requires empathy. The primary caretaker must be able to put himself or herself in the child’s place, to be ‘in tune’ with the child’s emotional needs,” (Winnicott, 1960b, p. 40). Second, “Unthinkable anxiety is kept away by this vitally important function of the mother at this stage, her capacity to put herself in the baby’s place and to know what the baby needs in the general management of the body, and therefore of the person’’ (Winnicott, 1962a, pp. 57–58). Third, “In her empathic focus on her child’s needs, the devoted mother treats the child as if he or she has a self that is substantive and worthy of notice. The result is a strengthening of the child’s burgeoning ego and the achievement of a fundamental sense of I am,” (Winnicott, 1958, p. 33).

DeRobertis (2010) noted, in the same context, that mother’s empathy contributes to the process of transforming her child’s nascent self into a strong, evolving nuclear self. The healthy developing self is able to consolidate vital feelings of aliveness into an organized source of inspired, spontaneous behavior in the world with others (DeRobertis, 2010). Thus, mother's empathy in early childhood enables emotional stability, which in turn decreases use of self-escape mechanisms such as addiction to binge eating, and enables children to develop self-confidence and self-reliance.

Our second research hypothesis, relating to negative and positive emotions as mediators between ECMI and addiction to binge eating, was also confirmed. These mediation effects demonstrated that a high level of mother's intrusiveness in early childhood may lead to more negative emotions and fewer positive emotions, which then lead to a higher level of addiction to binge eating, and vice versa. These findings are consistent with previous literature that indicates a positive relationship between parental intrusiveness and depression (Arslan et al., 2021; Fei et al., 2021; Kumar & Mattanah, 2018) and anxiety (Möller et al., 2016) among children and adults. In line with these findings, BEA can be viewed as a means to lower negative emotions in light of intrusive parenting in early childhood. No previous studies have been conducted, to our knowledge, regarding the negative relationship between parental intrusiveness and positive emotions in children and adults.

We also found two significant direct effects. First, ECME and EDFE are directly related to decreased addiction to binge eating. Second, ECMI is directly related to increased addiction to binge eating. Theses direct effects are, to our knowledge, the first evidence of a direct effect of early childhood mother's and father's empathy and intrusiveness on the addiction to binge eating in adult women, indicating that additional moderators to these correlations should be investigated. Beyond understanding the importance of parenting in early childhood as outlined above, this finding can also be explained through previous research (Authors, 2020) showing that in the face of negative life experiences there is a tendency to look for escape paths. Food addiction is one of these paths.

While most of our hypotheses were confirmed,no mediation was found in the correlation between early childhood father’s intrusiveness and addiction to binge eating. These findings reveal a differentiated parenting model in which the mother's relationship with her daughter in early childhood has a more significant correlation with negative and positive emotions and addiction to binge eating than the relationship with the father does. A recent review stated that mothers and fathers differ in parenting behavior, play different roles in the family, and adopt different parenting styles and practices during their children’s childhood and adolescence (Yaffe, 2020; Ziv & Arbel, 2021). Mothers are perceived as more accepting, responsive, and supportive, as well as more controlling, demanding, and autonomy-granting than fathers. Accordingly, studies comparing parents on the constructs of overall parenting styles stated that mothers were predominantly more authoritative than fathers, while fathers were predominantly more authoritarian than mothers (Yaffe, 2020). Moreover, reviews suggest that mothers’ and fathers’ behavior may have different impacts on the development of child anxiety and aggressiveness (Ziv & Arbel, 2021). These findings can be questioned, due to the greater level of fathers’ involvement in childcare in the modern world (Yeung et al., 2001) and the important role they play in child development (Cabrera et al., 2014). A possible explanation may be that while fathers are more involved now than they were in the past, maternal dominance and involvement in child socialization in the family as compared to fathers is still present in most families (Yaffe, 2020; Zhenghe et al., 2021). Thus, it was found in some studies, as well as this study, that mothers were perceived to be more controlling. Binge eating addiction can be viewed as an escape from negative emotions derived from painful early childhood relationships, which as we found in this study, correlated significantly more with the mother than the father.

This study had several limitations worth noting. Participation was restricted to women between the ages of 25 and 70, although binge eating occurs in early adolescence and across the life span. Therefore, we are unable to generalize our findings to those who are younger or older than our sample. Additionally, our survey was only conducted in Israel, which is a multicultural Westernized society. Therefore, it may be difficult to generalize the findings to women in general. In future studies it is recommended to test the model among other cultures

The small mediation effects of negative and positive emotions on the correlations of parents’ empathy and intrusiveness in early childhood with BEA that were found in this research indicate that additional studies should be done using other dimensions of early childhood experiences with the parents, such as support, stimulation, discipline, caregiving, and authorization (Verhoeven et al., 2017). Based on the understanding that binge eating addiction is related to both personal and environmental characteristics as well as the understanding that binge eating may be a way to escape an unbearable reality, this research focused on family characteristics. Additional surveys should be done using escape theory and the addiction component with personal and environmental characteristics (Higgins Neyland & Bardone-Cone 2017).

Taken together, our results integrating escape theory, the addiction component, and the importance of incorporating early relationships with the parents all into models of binge eating for adult women, indicate that our study has noteworthy contributions to make. First, on the theoretical level, this is, to the best of our knowledge, the first study which focuses on the addiction component in BED and investigates specific family factors in the context of escape theory among adult women. Thus, our study extended investigation of binge eating and enables a broad view that includes various aspects of women’s lives beyond the eating behavior and its influence on their weight. This study sets the stage for future directions looking for the emotional aspects among women with BED. Second, this is, to our knowledge, the first study which examined positive emotions as a component of escape theory, expending the theoretical knowledge. Third, our survey was conducted online, which may have enhanced response rates. As women dealing with food addictions are fearful of the stigma surrounding mental health and eating disorders (Zerbe, 2016), the online format allows them to participate via a largely anonymous modality that may have encouraged greater response rates and more honest responses.

On the implementation level, our study could encourage women with BED to seek help through psychotherapy, because it raises an awareness of problematic early childhood relationships with their parents (especially their mothers) and the negative emotions which drives them to binge eating. Processing painful experiences and emotions can take place by bringing the parents to the therapy sessions *in vivo*, or through therapy methods like guided affective imagery. Creating a safe space for the women to psychologically grow by developing beneficial therapist-patient relationships enables them to experience positive emotions that can have a healing effect on the addiction to binge eating, as it was found based on evidence from this study.

In conclusion, this study sheds light on an understudied content in the eating disorder literature. Through this work, we uncovered promising relations via our mechanistic models that help to disentangle pathways to binge eating. The results shine light on some of the reasons for why women may be addicted to binge eating. Results from this study indicate that early childhood relations with the parents have an impact that may affect the women's ability to cope with life, and lead her to become addicted to binge eating.