

**An Experimental Vignette Study: The Moderating Role of History of Maternal Guilt-
Induction on Emotion Regulation in Young Adults**

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Abstract

Parental guilt-induction has been found to be a need frustrating factor for children and have detrimental effects on emotion regulation later in life. There is an ongoing debate about whether individuals who have need frustrating experience are more sensitive and vulnerable to related psychosocial experiences. The current study explored the causal effects of history of guilt-induction and emotion regulation, after encountering the guilt-induction or autonomy-support vignette in young adults. Participants who completed the online survey ($N=342$, $Mage = 21.92$; $SDage = 3.23$, 67.5% female) which included the history of maternal guilt induction scale, were randomly allocated to one of the conditions (i.e., autonomy-support, guilt-induction with/without warmth). After reading the vignette, participants filled out the emotion regulation scale in response to the vignette. Results demonstrated that a history of guilt-induction was found to be positively associated with suppression and dysregulation, whereas no significant associations were found with integration. Moreover, it was found that young adults who were in the autonomy-supportive vignette condition and scored higher on history of maternal guilt-induction engaged more with emotional suppression compared to the other group who read the guilt-inducing vignette. On the contrary, young adults who were in the guilt-inducing vignette condition and scored lower on history of maternal guilt-induction engaged more with emotional suppression compared to those who read the autonomy-supportive vignette. Lastly, participants who read the guilt-induction vignette scored significantly higher on emotion dysregulation than those who did not. Current study explored the uncharted effects of maternal guilt-induction on young adults' emotion regulation ability.

Keywords: Guilt-induction, Self-Determination Theory, emotion regulation, autonomy-support, parental psychological control, sensitization, desensitization

An Experimental Vignette Study: The Moderating Role of History of Maternal Guilt-Induction on Emotion Regulation in Young Adults

Parental guilt-induction is a key element of psychological control that has been found to be related to reduced emotion regulation abilities in both children and adults (Barber & Harmon, 2002). Although many studies have examined the consequences of psychological control, less is known about whether some individuals might be more sensitive to the detrimental effects of this parenting style (e.g., Ryan and Deci, 2000; Kernis, Brown, & Brody, 2000). Two opposing theories were suggested, namely Sensitization (i.e., becoming more susceptible and reacting more strongly) and Desensitization Theory (i.e., becoming less susceptible and reacting less strongly). This study focused on the history of maternal guilt-induction as a possible moderator that determines the degree to which individuals suffer from psychological control. Moreover, this study will be the first to examine the relation between maternal guilt-induction and emotion regulation experimentally. Thus, the main aim is to explore the effects of the childhood experiences of maternal guilt-induction on emotion regulation abilities in young adults when encountering a trigger (i.e., vignettes), therefore, to shed more light on the discussion of sensitivity.

Parental Guilt-Induction as a Key Element of Psychological Control

Self-Determination Theory (SDT; Deci & Ryan, 2000) indicates the three basic psychological needs of competence, autonomy, and relatedness to be essential elements for an individual's growth, well-being, psychological flexibility, and life satisfaction (Vansteenkiste & Ryan, 2013). Competence refers to feeling effective and capable of succeeding in important tasks and activities (White, 1959). Autonomy refers to the experience of willingness, self-determination, and volition in their actions (Deci & Ryan, 1985). Finally, relatedness refers to feelings of closeness and genuine connection with others (Ryan, 1995). Psychological control is a commonly

examined construct within SDT as it has been found to frustrate these psychological needs. Parental psychological control refers to pressuring the child to think, feel, and act in certain ways through invasive and manipulative behavior that may include invalidation of a child's opinions or feelings and accusing the child (Barber & Harmon, 2002; Van der Kaap-Deeder et al., 2021). When parents use psychological control, children are more likely to experience pressure (i.e., autonomy frustration), feelings of incapability in meeting parental expectations (i.e., competence frustration), and conditional love from parents (i.e., relatedness frustration) (Soenens & Vansteenkiste, 2010). In contrast, autonomy-supportive parenting is characterized by exhibiting a child-centered attitude, meaning a willingness to understand the children's viewpoint, providing understandable reasons when their choice is restrained, cultivating, and supporting their self-initiation and self-determination (Deci et al., 1994; Soenens & Vansteenkiste, 2010).

A core element of parental psychological control is guilt-induction, where parents provoke feelings of guilt in the child as a mean to control their behavior or force compliance in the child (Barber & Harmon, 2002). Guilt-induction can be expressed through disapproval, disappointment, or dissatisfaction over children's non-compliance behavior (Rakow et al., 2008). To illustrate, the mother's expression of how much she works for buying food in response to the child's unwillingness to eat.

Previous research has shown that parental guilt-induction relates to maladjustment in the child (Ryan et al., 2006). For instance, the internal conflict between the feeling of loyalty, which is commanded by the feeling of guilt and built-up resentment for not being accepted as who they are. Correspondingly, it has been supported by research that this type of internal psychological controlling parenting style is a threatening factor for the psychological well-being of children (Bybee & Quiles, 1998; Mandara & Pikes, 2008). Parental guilt-induction has been shown to relate

to child maladjustment, as indicated for instance by internalizing symptoms (Morris et al., 2002; Soens & Vansteenkiste, 2010). To illustrate, McKee et al. (2014) showed a decrease in maternal guilt-induction resulted in reduced internalizing symptoms in children in their longitudinal study. This relation between the exposure to maternal guilt-induction and the psychological ill-being of the individual has been explained by the unfulfillment of the fundamental needs of the children as suggested in the Self-Determination Theory (Deci & Ryan, 2000). This link has been explained through emotion regulation difficulties, which is also found to be one of the core underlying mechanisms of psychological problems (Barber & Harmon, 2002; Morris et al., 2002).

Guilt-Induction and Emotion Regulation

Emotion regulation (ER) is defined as the ability to modulate the escalation, dissolution, and intensity of emotions (Gross, 2001). Within SDT, ER strategies can be divided into two main concepts: adaptive (i.e., integrative ER) and maladaptive (i.e., suppressive and dysregulated ER) strategies. Integrative ER stands for the ability to experience and express emotions freely with an open awareness and exploration attitude towards emerging emotions (Benita, 2020). Moreover, autonomy is considered as an important component of integrative ER as it is an internally motivated attitude of willingness to understand and deal with one's arising emotions (Ryan et al., 2006). On the contrary, suppressive ER and dysregulation are characterized by rigid and nonvolitional internal experiences. Suppressive ER involves not bringing emotions to awareness, conversely, emotions are ignored, hidden, or avoided. On the other hand, emotion dysregulation involves getting in touch with emotions but experiencing them as overwhelming and disorganizing, meaning that it interferes with one's functioning.

The psychologically controlling style of parenting was found to be a pressuring influence on children to ignore their negative feelings, which is linked to suppressive ER and dysregulation

(Roth et al., 2009). Additionally, the same study suggested that resentment towards parents as a result of psychologically controlling parenting predicts emotional dysregulation. As an alternative style, autonomy-supportive parenting is associated with non-defensive and effective emotional processing; thus, integrated regulation of emotions (Roth & Assor, 2012; Weinstein & Hodgins, 2009). Another study revealed that children of mothers who applied higher levels of psychological control experienced ER difficulties in their young adulthood (Manzeske & Stright, 2009).

Sensitization and Desensitization

Studies thus far have focused on how guilt-induction affects individuals at group levels, but less is known about possible individual differences in how people respond to the experiences of guilt-induction. Although SDT needs are considered as universal, there are individual and cultural differences in how people perceive, attribute, and react to need-frustrating events (Soenens et al., 2015). For instance, Chen et al. (2016) have found cultural differences in ways of perceiving and coping with parental guilt-induction in adolescents. However, the effects of having a parental guilt-induction history on their reaction to new encounters with guilt-induction have not been studied yet. In other words, less is known about the extent of individuals' sensitivity to a newly encountered guilt-induction. Conflicting theories have been suggested (i.e., Sensitization and Desensitization Theories) regarding the link between need deprivation and reaction to a related trigger. It has been investigated how a need deprivation experience in the past affects individuals' sensitivity to a congruent stimulus later in life (e.g., Howel et al., 2009; Ratelle, et al., 2013). As parental guilt-induction is considered a factor for need deprivation, the current study sought to explore this link in light of these conflicting theories.

According to the Sensitivity Theory, individuals with unmet fundamental needs from childhood are more sensitive to the events that are specific to that need and have a stronger

response to the events (Moller et al., 2010). In other words, the theory suggests that people who experienced need deprivation (e.g., through psychologically controlling parenting) during their upbringing, will have stronger negative psychological reactions to particular need frustration experiences. This theory is in line with the findings of Howell's (2009) study, in which sensitization was demonstrated regarding the need of autonomy and relatedness. On the other hand, the Desensitization Theory suggests that individuals who experienced need deprivation for long periods of time develop a defense against this frustration by lowering the value of the unsatisfied need (Deci & Ryan, 2000). Therefore, they become desensitized to both rewarding and frustrating experiences related to the specified need.

With respect to this study's topic, the Sensitization Theory supports that individuals who were more exposed to parental guilt-induction react more strongly when they encounter a new situation of parental guilt-induction, whereas the Desensitization Theory claims that people become less sensitive to the congruent situation due to the less value that has been put on the needs as a defense mechanism.

The Current Study

This study aims to examine possible individual differences in how young adults react to an encounter of maternal guilt-induction in terms of their ER, moderated by individuals' history of maternal guilt-induction. Although guilt-induction has been shown to be detrimental, less is known about whether some individuals might be more vulnerable to these detrimental effects by being more sensitized. The history of guilt-induction is focused upon as it has been found to be a frustrating factor for the basic needs of children, which interferes with psychological growth and flexibility.

Additionally, the extant studies with cross-sectional design suggest that maternal psychological control is associated with ER difficulties in children, adolescents, and adults (Barber & Harmon, 2002; Morris et al., 2002; Roth & Assor, 2012). However, there is a scarcity of experimental studies on this relation and less is known about possible individual differences in how people react to encountering parental guilt-induction.

In this study, due to the similar amount of evidence for both Sensitization and Desensitization Theories, we will not set prior expectations for the results and adopt an explorative attitude towards the research question. Therefore, the findings of the study might indicate that young adults who were exposed to maternal guilt induction in their childhood show higher engagement in less adaptive ER strategies (i.e., Suppressive, Dysregulation ER) when encountered with the guilt induction vignette as a trigger. On the contrary, it can be found that young adults who were exposed to maternal guilt-induction in their childhood engage more with the less maladaptive ER strategy (i.e., Integration ER) in response to the maternal guilt-induction vignette.

Methods

Participants

Of the 581 individuals who participated in the current study, 342 (58.9%) participants fully completed the survey. This final sample consisted of young adults between the ages of 18 and 25 ($M_{age} = 21.92$; $SD = 3.23$) and of which the majority (67.5%) was female. Regarding country of birth, most participants were born in Greece (39.8%) whereas others were born in Turkey (35.6%) or Bulgaria (16.4%). Most of the participants were students (75%). With respect to participants' highest achieved diploma, about half obtained a high school diploma (54.1%), whereas 30.6% had received a bachelor's degree and 7.1% had received a master's degree.

Procedure

Participants were recruited through the social network of the students participating in the related master's thesis project and through social platforms, thereby employing a convenience sampling methodology. Data collection took place among residents of Greece, Turkey, and Bulgaria. The inclusion criteria were that participants were fluent in Greek, Turkish, or English (participants in Bulgaria received the survey in English) and aged between 18 and 25. Participants completed an online survey through Qualtrics including various instruments, which took approximately 30 minutes to complete. Before starting the survey, participants were provided with an informed consent and a brief description of the aim of the study before starting the survey. Three countries, namely Greece, Turkey, and Bulgaria were selected to recruit the participants due to accessibility and aims of other studies of this master's thesis project. This study has been reviewed and approved by the Faculty Ethics Review Committee (FETC) of Utrecht University (approval number: 21-2108).

The design of the study was a between-subject experimental design. Questionnaires and vignettes were presented to the participants with three conditions differing in the type of vignette that was displayed (i.e., autonomy support, guilt-induction with warmth, and guilt-induction without warmth; see below). Participants were randomly allocated to one of these three conditions. After filling out a questionnaire assessing the perceived history of maternal guilt-induction, participants were presented with a vignette. They read this vignette and were then asked to indicate the degree to which they would employ certain ER strategies in response to the situation outlined in the vignette.

Materials

History of Maternal Guilt-Induction

To measure participants' history of maternal guilt-induction, 13 items were selected from different scales. Specifically, 3 items (e.g., "My mother makes me aware of her disappointment") were chosen from the Control by Guilt Induction Scale (Block et al., 1984), 3 items (e.g., "When my mother wants me to do something differently, she makes me feel guilty") from the Inducing Guilt Scale of the Perceived Parental Autonomy Support Scale (P-PASS; Mageau et al., 2015), 4 items (e.g., "Makes me feel guilty when I do not meet her expectations") from a parental guilt-induction scale as used by Olsen et al. (2002) and 3 items from Block's guilt induction items (e.g., "Makes me aware of how much she sacrifices or does for me") reported by Olsen et al. (2002). Due to the lack of a comprehensive guilt-induction scale, merging several subscales enabled us to capture guilt-induction more thoroughly. A 5-point Likert scale was used, ranging from 1 (Completely disagree) to 5 (Completely agree).

Vignettes

Three different vignettes were used that were based on the vignettes employed by Chen et al. (2016) and Van Petegem et al (2015). The vignettes included different parenting styles of a mother in the same situation. They were representing an autonomy supportive, guilt-inducing without warmth, and guilt-inducing with warmth style. This current study will only focus on the difference between autonomy supportive and guilt-inducing styles regardless of the warmth factor, as no significant differences were found between conditions with and without warmth (see Appendix B). Therefore, a new variable was created by merging guilt-induction with and without warmth conditions. Each vignette (see Appendix A) focused on the same situation: the interaction between a mother and a young adult who received an unexpectedly low grade for an important course. Participants first read the following hypothetical situation: "*One day you visit your mother and inform her about a lower grade than usual for an important course. Because initially you*

thought the test went fairly well, you expected good points, and this is also what you told your mother. When you now inform your mother about your low grade, here is what she says: (...)”.

Participants then read the reaction of the mother, which was different in each of the three conditions. In the autonomy support condition, the mother’s reaction was focused on fostering the child’s volitional functioning (e.g., “Perhaps you can try to see it as a challenge and think about other ways that you can try to learn the study material?”). In the guilt-induction condition, the mother’s reaction included expressions of disappointment, frustration, and guilt-induction (e.g., “I do all of this for you, so that you can study hard and get good grades. Is this poor result the thanks I get for my hard work? Please, I beg you, try not to disappoint me like this again”). Additionally, the guilt-induction with warmth condition included the same guilt-inducing elements but with a warm communication style (e.g., affectionate touching).

Emotion Regulation in Response to Vignettes

To measure the degree to which participants employed certain ER strategies in response to the vignette, the Emotion Regulation Inventory (ERI; Roth et al., 2009) was used. For each subscale (i.e., integration, suppression, dysregulation), 4 items were selected to shorten the scale, simplified, and adapted to the presented situation in the vignettes. Specifically, items were preceded by the stem “*If my mother reacted this way, (...)*” and followed by the adapted ERI items. For instance, integration: “I would try to understand the sources of my negative emotions”; suppression: “I would try to ignore my negative emotions”; dysregulation: “It would be hard for me to control my negative emotions”. Items were scored on a 5-point Likert scale, ranging from 1 (Completely disagree) to 5 (Completely agree).

Relevance, Credibility and Frequency of the Vignettes

Participants answered three questions to examine whether the given situation in the vignettes were comparable in their relevance (“How relevant is the situation as such (without the reaction of the mother)?”), credibility (“How believable is the situation as such (without the reaction of the mother)?”) and frequency (“Do you think individuals your age ever experiences such a situation?”), as also used previously by Chen et al. (2016). Items were rated on a 7-point Likert scale, ranging from 1 (*Not relevant at all/ Not believable at all/Never*) to 7 (*Very relevant/ Very believable/Frequently*).

Statistical Analyses

The statistical analyses were conducted with the Statistical Package for the Social Sciences (SPSS) version 27. First, descriptive statistics and Pearson’s correlations were calculated. Subsequently, a MANCOVA (multivariate analysis of variance) was performed to check the relation between the background variables (i.e., age, sex, education, country, and job status) and the outcomes (i.e., ER strategies). Regarding the main analyses, hierarchical regression analyses examining the effects of the history of maternal guilt-induction, the condition, and their interaction on ER in response to the vignette. By doing so, background variables that were found to be significantly related to ER were controlled for.

Results

Descriptive Statistics and Preliminary Analyses

Bivariate correlations and descriptive statistics among the measured variables separate for the two conditions (i.e., the autonomy support and guilt-induction condition) can be found in Table 1. Results regarding the autonomy support condition showed that a history of maternal guilt-induction was positively correlated with emotional dysregulation and suppression. Additionally, emotional dysregulation was positively correlated with suppressive ER. For the guilt-induction

condition, a history of guilt-induction was positively correlated with emotional dysregulation. Moreover, suppressive ER was negatively correlated with dysregulation and integrative ER.

Table 1

Descriptive Statistics and Correlation Coefficients for History of Guilt-Induction, Emotion Regulation in Response to Vignettes for Different Conditions

Variables	<i>M (SD)</i>		1	2	3	4
	AS	GI				
1. History of guilt-induction	33.39 (13.81)	35.27 (13.72)	-	.08	.11	.13*
2. Integration	3.52 (0.81)	3.62 (0.91)	.91	-	-.22**	.10
3. Suppression	2.68 (1.17)	2.55 (1.04)	.43**	.15	-	-.21**
4. Dysregulation	2.42 (1.08)	3.73 (0.98)	.27**	.10	.24*	-

Note. AS = Autonomy support condition. GI = Guilt-induction condition.

Above the diagonal are the correlations for the guilt-induction condition; below the diagonal are the correlations for the autonomy support condition.

* $p < .05$, ** $p < .01$.

Additionally, the relations between the study variables and the background variables (i.e., age, sex, education, country, and job status) were examined with a MANCOVA analysis. No significant associations were found between the study variables and the background variables.

Primary Analyses

To investigate the relation between the vignette condition (i.e., autonomy support or guilt-induction) and ER strategies used in reaction to vignettes and whether the history of guilt-induction

(GI) moderates this relationship, three hierarchical multiple regression analyses with interaction were carried out. The analyses were conducted for each ER strategy as the dependent variable. The history of guilt-induction was standardized, the condition variable was dummy coded (autonomy support vignette= 0, guilt-induction vignette= 1), and an interaction variable was created by multiplying the standardized score of history of guilt-induction with the dummy coded condition variable.

Hierarchical Multiple Regressions for Integration

First, a hierarchical multiple regression was conducted where history of guilt-induction and condition were entered in Step 1 and their interaction was added in Step 2 as predictors of integrative ER (see Table 2). Results showed that both the history of guilt-induction, condition, and their interaction were unrelated to the integration ER.

Table 2

Hierarchical Multiple Regression Analysis with History of Guilt-Induction, Condition, and Their Interaction Predicting Integrative Emotion Regulation.

	Step 1				Step 2			
	<i>B (CI)</i>	<i>SE</i>	<i>b</i>	<i>t</i>	<i>B (CI)</i>	<i>SE</i>	<i>b</i>	<i>t</i>
Constant	3.53 [3.36, 3.69]			43.08**	3.53 [3.36, 3.69]			42.85**
HGI	0.07 [-0.02, 0.16]	0.05	0.08	1.50	0.07 [-0.09, 0.23]	0.05	0.08	.90
Condition	0.09 [-0.11, 0.29]	0.10	0.05	0.92	0.09 [-0.11, 0.29]	0.10	0.05	0.91
HGI x Condition					-0.01 [-0.20, 0.19]	0.10	-0.01	-0.05
<i>R</i> ²		0.01				0.01		

Note. HGI = History of guilt-induction. B = Unstandardized beta coefficient. CI = Confidence interval. SE = Standard error. b= Standardized beta coefficient.

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

Hierarchical Multiple Regression for Suppression

First, a hierarchical multiple regression was conducted where history of guilt-induction and condition were entered in Step 1 and their interaction was added in Step 2 as predictors of suppressive ER (see Table 3). A moderate positive association between history of maternal guilt-induction and suppression was found, indicating that participants who scored higher on history of

maternal guilt-induction reported higher scores of emotional suppression in response to the vignette. Lastly, a significant moderating effect of the history of maternal guilt-induction was found on the relation between the vignette condition and suppressive ER as a response to the vignette (Figure 1).

Table 3

Hierarchical Multiple Regression Analysis with History of Guilt-Induction, Condition, and Their Interaction Predicting Suppressive Emotion Regulation.

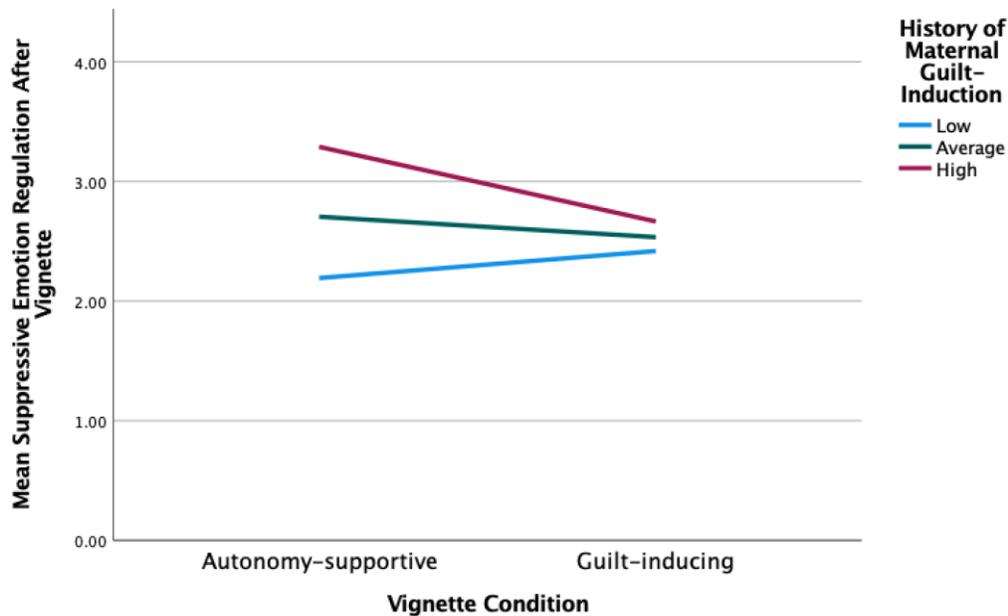
	Step 1				Step 2			
	<i>B (CI)</i>	<i>SE</i>	<i>b</i>	<i>t</i>	<i>B (CI)</i>	<i>SE</i>	<i>b</i>	<i>t</i>
Constant	2.71 [2.52, 2.90,]	0.10		27.47**	2.74 [2.55, 2.93]	0.10		28.03**
HGI	0.24 [0.13, 0.35]	0.06	0.22	4.27**	0.50 [0.31, 0.69]	0.10	0.46	5.17**
Condition	-0.17 [-0.41, -0.07]	0.12	-0.07	-1.42	-0.20 [-0.43, -0.04]	0.12	-0.09	-1.65
HGI x Condition					-0.39 [-0.62, -0.16]	0.12	-0.29	-3.28**
<i>R</i> ²		0.05				0.07		

Note. HGI = History of guilt-induction. B = Unstandardized beta coefficient. CI = Confidence interval. SE = Standard error. b= Standardized beta coefficient.

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

Figure 1

Suppressive emotion regulation in relation to vignette condition and history of guilt-induction



Hierarchical Multiple Regression for Dysregulation

First, a hierarchical multiple regression was conducted where history of guilt-induction and condition were entered in Step 1 and their interaction was added in Step 2 as predictors of emotion dysregulation (see Table 4). A moderate positive association was found between maternal guilt-induction history and emotion dysregulation in response to the vignette, indicating that participants who scored higher on history of maternal guilt-induction reported higher levels of emotion dysregulation. Furthermore, a positive association was detected between the condition variable and emotion dysregulation, which indicates that the participants who were in the guilt-induction vignette condition were more likely to score higher on emotion dysregulation. Finally, the association between emotion dysregulation and the interaction of history of maternal guilt-induction and vignette condition was found to be non-significant.

Table 4

Hierarchical Multiple Regression Analysis with History of Guilt-Induction, Condition, and Their Interaction Predicting Emotion Dysregulation.

	Step 1				Step 2			
	<i>B (CI)</i>	<i>SE</i>	<i>b</i>	<i>t</i>	<i>B (CI)</i>	<i>SE</i>	<i>b</i>	<i>t</i>
Constant	2.44 [2.26,2.62]	0.09		26.28**	2.45 [2.27, 2.63]	0.09		26.31**
HGI	0.18 [0.08, 0.29]	0.05	0.15	3.41**	0.29 [0.11, 0.48]	0.09	0.25	3.18*
Condition	1.29 [1.06, 1.51]	0.11	0.51	11.35*	1.27 [1.05, 1.50]	0.11	0.51	11.25**
HGI x Condition					-0.17 [-0.39, 0.05]	0.11	-0.12	-1.49
<i>R</i> ²		0.29				0.29		

Note. HGI = History of guilt-induction. B = Unstandardized beta coefficient. CI = Confidence interval. SE = Standard error. b= Standardized beta coefficient.

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

Discussion

The purpose of this study was to investigate the effects of childhood experiences of maternal guilt-induction on young adults' ER abilities after encountering a guilt-induction trigger (i.e., vignette). Previous studies have investigated the individuals' reaction in light of SDT regarding the theories of sensitization and desensitization (Ratelle et al., 2013; Howel et al., 2009).

However, there was a scarcity of research about the effects of the history of maternal guilt-induction on ER abilities in terms of reactivity to a guilt-induction trigger. Although the detrimental effects of maternal guilt-induction were already shown, the possible vulnerability regarding ER in young adults who have a history of maternal guilt-induction was not studied.

The results yielded significant positive associations between the history of guilt-induction with suppressive and dysregulated ER. These findings are in line with previous literature that suggested psychological controlling parenting is associated with children's engagement with maladaptive ER strategies later in their lives (Roth et al., 2009; Manzeske & Stright, 2009). The history of guilt-induction and integrative ER were not found to be significantly related, which contradicts with the theoretical framework. Although studies have suggested that autonomy-supportive parenting was associated with integrative ER, the results yielded that the high autonomy-suppressive (i.e., controlling) parenting style do not predict low integrative ER in young adults (Roth & Assor, 2012; Weinstein & Hodgins, 2009). However, it must be acknowledged that our scales have measured ER strategies as a response to the encountered vignette and did not encompass the general ER abilities of young adults. Thus, if the current study had focused on the general emotion regulation abilities, different results may have been observed.

Further, the findings showed that young adults who encountered the guilt-induction vignette scored higher in emotion dysregulation than those who encountered the autonomy-support vignette. This result suggested that encountering guilt-induction tends to provoke emotion dysregulation in young adults. On the other hand, suppressive or integrative ER were not found be associated with the vignette conditions. Thus, current findings support that young adults encountering with autonomy-frustration are likely to feel overwhelmed or get disorganized by their emotions. This is in line with Brenning et al.'s (2020) findings that pointed out the high levels of

emotion dysregulation in adults who perceived their mothers to be highly psychologically controlling. Additionally, in the same study, it was found that suppressive ER is not related to maternal psychological control. Therefore, it was concluded that being pressured to think, behave, and feel in particular ways in childhood, increases the tendency of getting overwhelmed by having negative emotions in adulthood (Brenning et al., 2020).

With respect to the main aim of this study, the findings revealed that the history of maternal guilt-induction buffered the relation between the vignette condition and suppressive ER in young adults. It was found that young adults scoring high on history of maternal guilt-induction engaged in lower levels of emotional suppression after reading guilt-inducing vignette than those who read the autonomy-supportive vignette. This finding is in line with the Desensitization Theory which suggests that individuals who experienced need deprivation in their childhood become desensitized to frustrating experiences related to congruent events (Deci & Ryan, 2000).

Another reason for this finding might be related to the adaptive and compliant tendencies of young adults who experienced parental psychological control in their childhood (Barber & Harmon, 2002). The autonomy-supportive scenario (see Appendix A) included an attitude that can easily provoke positive emotions in the child with its supportive and growth-mindset elements. As young adults who have maternal guilt-induction experiences in childhood may feel the pressure to comply with their mother's response and do not express their own feelings, they might have engaged in more suppressive ER (Barber & Harmon, 2002). In our scale, this type of ER included ignoring one's negative emotions and hiding them from the mother in response to her expression. Thus, this reaction might be a manifestation of compliance behavior and may be rooted in feelings of pressure, guilt, and the need for approval (Rakow et al., 2008).

On the other hand, among participants who were not exposed to maternal guilt-induction in their childhood, those who read the guilt-inducing scenario scored higher on suppressive regulation compared to participants who read the autonomy-supportive scenario. Thus, young adults who were not accustomed to guilt-inducing behavior of their mother and in the guilt-inducing condition expressed they would tend to ignore and hide their emotions more than those who were in the autonomy-supportive condition. This finding could be explained by the controlling and pressuring nature of guilt-induction in which the volitional exploration and expression of emotions are not likely to be seen (Roth et al., 2009).

With respect to other ER strategies, the interaction relation between history of guilt-induction and the vignette condition were not found to be significant. This finding indicated that childhood experiences of maternal guilt-induction do not have any effect on their engagement with integrative ER or emotion dysregulation when they encountered either scenario. Therefore, the current study suggests that individual differences in the childhood experiences of maternal guilt-induction buffered the between-vignette differences only in emotional suppression.

Strengths, Limitations, and Future Directions

There are some notable limitations of this study. First, the cultural diversity of the sample may hinder the generalizability of this study. This should be taken into consideration as Chen et al. (2016) found a cultural diversity in the perception of guilt-induction. Therefore, future studies may examine this topic in a more culturally diverse sample. Additionally, it is worth mentioning that the length of the questionnaire might have worn out the participants and contributed to several mistakes due to attention difficulties or boredom factors. Finally, this study was based on maternal parenting, which leaves out the parenting style of the fathers. Focusing on parental guilt-induction, which encapsulates both parents, would be a more comprehensive study. On the other hand, there

are methodological strengths worth mentioning. The large sample size contributed much to the generalizability of the study with high robustness. Likewise, the experimental design of the study which enabled us to explore causal effects was a notable factor as it was the first study to investigate causal relations regarding this topic.

Considering the possible confounders such as intergenerational similarity (e.g., shared genetics) would be important for future studies investigating the effects of parental guilt-induction on ER. For instance, mothers may likely to be engaging in controlling parental strategies due to their own maladaptive ER (Brenning et al., 2020). Therefore, the relation between history of maternal guilt-induction and maladaptive ER which is found in the current study may also be explained by the inherited genes from mother to offspring.

Practical Implications and Conclusion

Past research has shown that ER is one of the core elements of psychological health and well-being (Sheppes et al., 2015; Hannesdóttir & Ollendick, 2017). Consequently, difficulties in ER were found to be a risk factor for psychopathology, with a range of psychological problems (e.g., depression, anxiety, borderline personality, suicidal ideation, aggression, and sleep problems) (Zafar, 2020). Therefore, the findings of this study have important implications. First, parents could be more informed about the effects of guilt-induction and its detrimental effects on their children's psychological well-being. Second, the clinical field of child and adolescent psychology and counseling departments could be informed about this relation and develop preventative interventions. Lastly, the findings could be insightful for mental health practitioners about the patterns of ER and parental influences.

Overall, the present research was the first to reveal the effects of maternal guilt-induction on ER in young adults and attempted to shed light on the debate of Sensitization and

Desensitization Theories. The findings highlighted the association between the history of maternal guilt-induction and engagement with maladaptive ER strategies. Furthermore, it was found that young adults who had higher scores on history of maternal guilt-induction and were in the autonomy-supportive condition engaged more with emotional suppression compared to those who encountered the guilt-inducing scenario. On the contrary, young adults who were less exposed to maternal guilt-induction and read the maternal guilt-inducing scenario engaged more with emotional suppression than those who read the autonomy-supportive scenario. Finally, participants who encountered the guilt-induction scenario scored higher on emotion dysregulation. Thus, the findings of this study have important implications for clinical fields and further research exploring the effects of maternal guilt-induction on ER.

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Appendix A

Vignette Scenarios

One day you visit your mother and inform her about a lower grade than usual for an important course. Because initially you thought the test went fairly well, you expected good points, and this is also what you told your mother. When you now inform your mother about your low grade, here is what she says:

Autonomy-supportive scenario

Aw, I know you had a good feeling about it and you probably expected to do better. You tried your best, so I can imagine this grade is not what you hoped for. Why do you think you got this result? It happens sometimes you do better on a test than other times. Ok, I know it didn't go well this time, but you can try to learn from what went wrong. Perhaps you can try to see it as a challenge and think about other ways that you can try to learn the study material? If you need help, you can always rely on me.

Guilt-inducing scenario, High warmth:

Your mother sits down next to you and puts her arm around you. She says:

“You gave me hope that your result would be good, so how can I be anything but sad and disappointed with this result? Don't you feel guilty about this inferior score?”

You know I really care for you,

but you probably didn't put much effort into studying for the test. You know, I try really hard to take care of you and this family.”

Your mother smiles at you and before she walks away, she gives you a hug and adds:

“I do all of this for you, so that you can study hard and get good grades. Is this poor result the thanks I get for my hard work? Please, I beg you, try not to disappoint me like this again. Study hard for your next test so that you don’t get a bad grade.”

Guilt-inducing scenario, Low warmth:

Your mother sits across from you. She says:

“You gave me hope that your result would be good, so how can I be anything but sad and disappointed with this result? Don’t you feel guilty about this inferior score?

I hate to reiterate again and again how much I care for you.

You probably didn’t put much effort into studying for the test. You know, I try really hard to take care of you and this family.”

Your mother stares at you and as she is walking away, she adds:

“I do all of this for you, so that you can study hard and get good grades. Is this poor result the thanks I get for my hard work? Please, I beg you, try not to disappoint me like this again. Study hard for your next test so that you don’t get a bad grade.”

Appendix B

Difference Between Guilt-Induction With and Without Warmth Conditions

To investigate whether the guilt-induction with and without warmth vignette conditions differed in terms of the emotion regulation strategies (i.e., integrative, suppressive, and dysregulated emotion regulation) in response to vignette, a MANOVA analysis was conducted. The results indicated that there were no significant differences between the conditions; $F(3, 235) = 0.32, p = .81$; Wilk's $\Lambda = 1.00$.