



**The Effects of Maternal Autonomy-Support and Guilt-
Induction on Young Adults' Emotion Regulation and the Moderating
Role of Maternal Warmth.**

Marina Boti

Student Number: 4556887

Department of Clinical Psychology, Utrecht University

Supervisor: Prof. Dr. Jolene Van der Kaap-Deeder

January 31, 2022

Abstract

Based on Self-Determination Theory, the present experimental study examined the effects of maternal autonomy-support and guilt-induction on young adults' emotion regulation (i.e., integrative emotion regulation, emotion suppression and dysregulation). In addition, this study examined the moderating role of maternal warmth in the relation between guilt-induction and emotion regulation. The sample consisted of 530 young adults from Greece, Turkey, and Bulgaria ($M_{age} = 21.35$; $SD_{age} = 2.07$; 72.2% female) who were randomly assigned to one of three vignettes (i.e., autonomy-support, guilt-induction/low warmth, guilt-induction/high warmth). After reading the vignette, participants indicated the perceived parenting with respect to the vignette and their emotion regulation strategies in response to the vignette. Results showed that participants in the autonomy-supportive condition reported higher levels of perceived autonomy-support and warmth and lower levels of guilt-induction and emotion dysregulation than participants in both guilt-inducing conditions, with these two latter conditions not differing significantly with respect to both perceived parenting and emotion regulation. Current findings add to the growing literature on guilt-induction by showing that regardless of displayed parental warmth, guilt-induction has detrimental effects on individuals' emotion regulation. Furthermore, given the key role of emotion dysregulation in ill-being, mental health services and counselling programs could even further try to consider the importance of maternal parenting practices for young adults' emotion regulation capabilities.

Keywords: autonomy-support, guilt-induction, warmth, emotion regulation, Self-Determination Theory.

Self - Determination Theory (SDT; Deci & Ryan, 2000), a broad theory on human motivation and socialization, states that emotions can foster individuals' psychological growth, thereby referring to both positive and negative emotional experiences. However, to fully benefit from one's emotions, an integrative emotion regulation style is vital according to SDT (Benita, 2020; Van der Kaap-Deeder et al., 2016). Integrative emotion regulation is apparent when individuals explore emotions in an unbiased way, express them volitionally and employ them to facilitate choices and self-guidance of actions. Parents, as primary socialization figures, play a crucial role in helping children develop integrative emotion regulation by employing autonomy-supportive parenting (Roth et al., 2019).

Contrary to autonomy-supportive parenting, psychological controlling parenting undermines adaptive emotion regulation as it has been shown to predict internalizing distress and externalizing problems. (Morris et al., 2017; Roth et al., 2019; Soenens et al., 2018). With respect to the effects of psychological controlling parenting on emotion regulation, studies have focused mostly on a specific form of psychological control called conditional regard (Roth et al., 2019).

Guilt-induction is another form of parental psychological control and its effects on emotion regulation have not been examined sufficiently. Moreover, while some studies have shown detrimental effects of guilt-induction, other studies did not find such effects (Scharf & Goldner, 2018; Soenens et al., 2017). Given the inconsistent results, the investigation of possible moderators may contribute to a better understanding of when guilt-induction affects children's and adults' emotional functioning. The moderating role of parental warmth in the link between negative parenting and the adverse outcomes in children's psychological growth has received

great attention by researchers since its essential contribution to children's emotional development (Rohner et al., 2005).

Taking all the above into consideration, this experimental study aimed first to further establish the positive effects of autonomy-supportive parenting on emotion regulation of young adults. Furthermore, it pursued to examine the effects of maternal guilt-induction on emotion regulation of young adults and the moderating role of maternal warmth in this relation. To my knowledge, the current study is unique in examining the effects of maternal autonomy-support and guilt-induction on young adults' emotion regulation within an experimental study design. Moreover, no study thus far has examined the moderating role of maternal warmth in the relation between maternal guilt-induction and emotion regulation.

SDT's Taxonomy of Emotion Regulation.

According to SDT, there are three styles of emotion regulation, integrative emotion regulation, suppressive emotion regulation and dysregulation (Benita, 2020). Integrative emotion regulation is autonomous, effective, and healthy and requires an open, nonjudgmental and curious stance towards emotions once they arise. Awareness of emotions and motivation to understand their meaning are integral parts of integrative emotion regulation. On the contrary, individuals who use suppression as an emotion regulation style tend to avoid, ignore, or conceal negative emotions. As a result, they lack emotional awareness and hamper an active exploration and autonomous regulation of their emotions.

Along with suppression, dysregulation is also a maladaptive and non-autonomous emotion regulation style. Individuals who apply this emotion regulation style, although they are aware of their emotions, they view them as overwhelming and troubling hence they do not bring them into awareness. Moreover, they do not express

their emotions volitionally but in unmodulated and impulsive ways (Benita, 2020, Roth et al., 2019).

Integrative emotion regulation has been associated with higher self-esteem, prosocial behavior, and well-being (Benita, et al., 2019; Roth et al., 2019).

Conversely, both suppression and dysregulation have been associated with adverse psychological outcomes. Specifically, suppression was found to be a significant predictor of depression in a sample of college students, but it has also been associated with impaired self-esteem and depression in adolescents (Aldao et al., 2010; Benita et al., 2019). With respect to dysregulation, studies support its associations with high subjective distress, self-harming behavior and peer rejection due to expressive outbursts or withdrawal (Roth et al., 2019).

The Relation from Autonomy Support and Psychological Control to Emotion Regulation

Autonomy-supportive parenting is characterized by the promotion of children's volitional functioning which can be displayed through following the child's developmental rhythm, considering the child's viewpoint, boosting his/her self-initiation, promoting choice and providing rationale for expectations and rules. As a result, children in such environments experience satisfaction of their basic psychological needs for autonomy (i.e., feel free to be who they want to be), competence (i.e., feeling effective in various tasks and challenges) and relatedness (i.e., feeling appreciated and connected with important others) (Soenens & Vansteenkiste, 2010; Van der Kaap-Deeder et al., 2021).

Satisfaction of these basic psychological needs is central to SDT and is related with various well-being indicators such as a higher self-control, a more robust and clear identity, and a higher level of prosocial behavior (Roth et al., 2019).

Furthermore, parents who apply autonomy-supportive parenting show an authentic interest in their children's emotions, thereby easing pressure and encouraging exploration of emotions with greater concern and less defensiveness. Consequently, autonomy-supportive parenting was found to relate positively with integrative emotion regulation (Brenning et al., 2015; Roth et al., 2019) and to predict better young adults' emotion regulation (Gong & Wong, 2021).

Psychologically controlling parenting is contrasted with autonomy-support. This form of parenting refers to parenting techniques which are manipulative and aim to induce negative feelings in children such as guilt, shame or anxiety to make them exhibit the desired behavior. Parental guilt-induction, a specific form of psychological control, refers to pressuring children to behave, think or feel in a certain way by inducing guilt (Barber, 1996). When employing guilt-induction, parents thwart children's satisfaction of the basic psychological needs for autonomy, competence, and relatedness. Therefore, children in guilt-inducing contexts are more likely to experience internal conflicts, have less psychological flexibility and develop ill-being (Romm et al., 2019; Ryan et al., 2015; Soenens & Vansteenkiste, 2010; Vansteenkiste & Ryan, 2013).

With respect to emotion regulation, children who grow up in less autonomy supportive environments are more prone to engage in dysfunctional emotional regulation, as they feel controlled or overwhelmed by their emotions (Benita, 2020; Deci & Ryan, 2000; Luebke et al., 2014). Interestingly, Manzeske and Stright (2009) found that mothers who tend to use high levels of guilt-induction have offspring with maladaptive emotion regulation in young adulthood even when parents also display a high level of warmth. Furthermore, in the study of Goger et al. (2020) young adult's reports of higher maternal psychological control were associated with higher anxiety

symptoms and difficulties in emotion regulation compared to young adult's reports of lower maternal psychological control.

The Moderating Role of Parental Warmth

Although the above findings support the negative associations between psychological control and adaptive emotion regulation, there is a disagreement in the extant research regarding the universality of such associations (Scharf & Goldner, 2018). Indicatively, Fung and Lau (2012) found that in a sample of Chinese children, the relation from psychological control to children's internalizing and externalizing symptoms was not significant after they control for parental rejection. These findings seem to indicate that not all children are equally affected by parental psychological control, which points out the need for the examination of possible moderators that may explain this inconsistency.

Several studies have investigated whether parental warmth mitigates the effects of negative parenting practices on children's emotional functioning. Parental warmth satisfies the fundamental need of children for acceptance and can be conveyed physically (through a kiss, hug, etc.) and verbally (through praise, compliments etc.) (Rohner et al., 2005). Raudino et al. (2013) stated that maternal warmth abolished the impact of maternal intrusiveness and overcontrol on child anxiety, suggesting that the effects of controlling parenting are dependent on the emotional quality of the parent- child relationship. Moreover, Selçuk et al. (2021) found that adolescents with low levels of perceived maternal warmth were more affected by their mother's psychologically controlling behaviors compared to adolescents with high levels of perceived maternal warmth.

The above studies pointed out the importance of considering parental warmth when examining the effects of parenting on children's and adolescents' emotion

regulation. However, no study thus far examined its moderating role in the link between maternal guilt-induction and young adults' emotion regulation.

The Present Study

The above literature highlights the importance of parental autonomy-support in the development of integrative emotion regulation in children and adults. As to psychological control, despite most studies showing its relation to emotion difficulties, there are also some studies showing that individuals do not always suffer from parental psychological control.

To shed more light on this issue the present experimental study aimed to examine the following hypotheses. First, it was expected that individuals in the autonomy-support condition would report a higher level of integrative emotion regulation and a lower level of emotion suppression and dysregulation, whereas individuals in the guilt-induction condition would report a lower level of integrative emotion regulation and a higher level of emotion suppression and dysregulation (Hypothesis 1). Further, it was expected that individuals in the guilt-induction combined with high warmth condition would report a lower level of emotion suppression and dysregulation than individuals in the guilt-induction condition combined with low warmth (Hypothesis 2)

Method

Participants and Procedure

In total, 530 individuals took part in this study with 58.9% fully completing the survey. Participants were aged between 18 and 25 years (*Mage*: 21.35; *SD* = 2.07; 72.2% female) and indicated to be born in Greece (43.2%), Bulgaria (13.7%) or Turkey (37.1%). With respect to participants' education, 277 (i.e., 56.4%) had a high school diploma, 147 (i.e., 29.9%) had a bachelor's degree and 23 (i.e., 4.7%) had a

master's degree. Moreover, 304 (i.e., 61%) participants were single, 188 (i.e., 37.8%) had a partner, and 4 (i.e., 0.8%) were living together with a partner or were married. Regarding job status, 91 (i.e., 18.3%) participants had a full-time job, 104 (i.e., 20.9%) had a part-time job and 303 (i.e., 60.8%) were not working. Finally, 78.1% of the participants were students.

This study employed a between-subject experimental design. To examine the study hypotheses, three different vignettes were presented to young adults from Greece, Bulgaria, and Turkey. The vignettes concerned three different conditions: autonomy-support, guilt-induction with high warmth and, guilt-induction with low warmth. Young adults were randomly distributed to the three conditions. After reading the vignettes, participants were asked to fill out a series of questionnaires concerning their perceived level of autonomy-support, guilt-induction, and warmth with respect to the vignette as well as their emotion regulation strategies in response to the vignette (see the appendix).

Ethical permission was obtained from the Faculty Ethics Review Committee (FETC) of Utrecht University in the Netherlands. Participants were recruited through social media. Three questionnaires were created in Qualtrics (i.e., an online survey tool), one for Greek participants (with the Greek version of the questionnaires), one for Bulgarian participants (with the English version of the questionnaires) and one for Turkish participants (with the Turkish version of the questionnaires). Before completing the survey, participants were informed about the aim and procedure of the study, and about the possible advantages and disadvantages. Further, participants were informed that their data would be processed in a confidential way, that their participation was voluntary, and that they could terminate their participation at any

time. All participants completed an informed consent. Finally, participation took about 20 – 30 minutes.

Measures

Vignettes. Three vignettes were used to represent three different maternal communication styles, that is, an autonomy-supportive style, a guilt-inducing style combined with high warmth and a guilt-inducing style combined with low warmth. The three vignettes describe the same situation in which the young adult had obtained a lower grade than usual for an important course. Specifically, participants were asked to imagine the following 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: [...].”* After this description participants read a maternal request to study more next time, but it was formulated in three different maternal styles, that is, autonomy-supportive style (e.g., use of inviting language), guilt-inducing style with high warmth (e.g., expressing disappointment and referring to maternal sacrifices that have been made for the young adult along with the use of warm verbal and physical behavior such as smiling and giving a hug) and guilt-inducing style with low warmth (e.g., presence of cold behavior combined with guilt-induction).

The vignettes were based on Chen et al. (2016). Specifically, the autonomy-support vignette was the same as used in Chen et al. (2016). However, the guilt-induction vignette as used by Chen et al. (2016; based on Van Petegem et al., 2015) was adapted as to create two versions: Guilt-induction with high warmth and guilt induction with low warmth. Also, small adaptations were made to the situation, as Chen et al. (2016) focused on adolescents, and the present study focused on young

adults. Moreover, some small language-related changes were made to make the use of English correct.

Finally, the vignettes were translated to Greek and Turkish for, respectively, the Greek and Turkish participants. To ensure conceptual equivalence across languages, a back translation procedure was performed. In both cases, the questionnaire was translated from English into Greek or Turkish by students native in Greek or Turkish and then translated back to English by a researcher native in Greek or Turkish who was highly familiar with the theoretical constructs of this study. The back-translated and original English questionnaires were compared, and points of inconsistency between them were discussed so as the items in Greek and Turkish to reflect accurately the original meaning in the English questionnaire (Chen et al., 2016).

Perceived Autonomy-Supportive Parenting. To measure the degree to which participants perceived the mother's reaction in the vignette as autonomy-supportive, four items (e.g., "allows me to make my own plans for the things I do") from the "Autonomy Support Scale of the Perceptions of Parents Scale" (Grolnick et al., 1991) were employed. Items were preceded by the stem "If my mother reacted this way, I would feel like she...". Items were rated on a 5-point Likert scale ranging from 1 (*completely disagree*) to 5 (*completely agree*). Cronbach's alpha was .94.

Perceived Psychological Controlling Parenting. To measure the degree to which participants perceived the mother's reaction in the vignette as guilt-inducing two items (e.g., "insists upon doing things her way") from the "Psychological Control Scale – Youth Self-Report" (PCS – YSR; Barber, 1996) and two items (e.g., "is trying to change how I see things") from the "Perceptions of Parents Scale" (POPS; Grolnick et al., 1997) that were preceded by the stem "If my mother reacted this way,

I would feel like she...” were employed. Additionally, three items from the “Child Rearing Practices Report” (CRPR; Roberts, 1984; e.g., “makes me aware of disappointment”), five items from the psychological control scale by Olsen et al. (2002; e.g., “tells me I am not as good as she was growing up”) and two items from the “Perceived Parental Autonomy Support Scale” (P-PASS; Mageau et al., 2015; e.g., “makes me feel guilty”) were employed. The items from the psychological control scale by Olsen et al. (2002) were adapted as to have a child-report instead of parent-report, and as to apply them to the vignette. Items were rated on a 5-point Likert scale, ranging from 1 (*completely disagree*) to 5 (*completely agree*). Cronbach’s alpha was .97.

Perceived Maternal Warmth. To measure the degree to which participants perceived the mother’s reaction in the vignette as warm, the Warmth/Affection Subscale of the “Adult Parental Acceptance-Rejection Questionnaire” (Rohner, 2005) was employed. This warmth subscale consists of 8 items (e.g., “says kind words about me”) being preceded by the stem “If my mother reacted this way, I would feel like she...”. The items originally refer to childhood, but, in line with the other parenting questionnaires, they were stated in the present tense. Items were rated on a 5-point Likert scale, ranging from 1 (*completely disagree*) to 5 (*completely agree*). Cronbach’s alpha was .95.

Emotion Regulation. To measure the emotion regulation of the participants in response to the vignette, twelve items from the “Emotion Regulation Inventory” (ERI; Roth et al., 2009) were employed. Items were preceded by the stem “If my mother reacted this way...”. The “ERI” consists of three subscales: Integration (e.g., “I would try to understand the sources of my negative emotions”; $\alpha = .66$), suppression (e.g., “I would try to hide my negative emotions so my mother would not notice it”; α

= .81), and dysregulation (e.g., “It would be hard for me to control my negative emotions (such as sadness or anger)”; $\alpha = .85$). From each subscale, four items from the six were employed. Items were adapted to the situation (participants’ response to the vignette) and were rated on a 5-point Likert scale, ranging from 1 (*completely disagree*) to 5 (*completely agree*).

Relevance, Credibility and Frequency of the Vignettes. To assess the relevance, credibility and frequency of the vignettes, participants were asked to read again the situation, without the reaction of the mother. After that, they were asked to answer the following questions as used previously in Chen et al. (2016): “How relevant is the situation as such (without the reaction of the mother)”, “How believable is the situation as such (without the reaction of the mother)”, “Do you think individuals your age ever experiences such a situation?”. The items for relevance, credibility and frequency were rated on 7-point Likert scale ranging from 1 (*not relevant at all*) to 7 (*very relevant*) for relevance, 1 (*not believable at all*) to 7 (*very believable*) for credibility and 1 (*never*) to 7 (*frequently*) for frequency.

Plan of Analyses

The data analysis was performed using SPSS IBM 27. First, I performed descriptive statistics to test the relevance, credibility and frequency of the vignettes. Second, Pearson’s correlations were computed to examine the associations between the perceived maternal communication styles (in the vignette) and the emotion regulation in response to the vignette. A multivariate analysis of covariance (MANCOVA) was conducted to check for the effects of the background variables. Further, a manipulation check was performed to determine the effectiveness of the manipulation in terms of perceived autonomy-support, guilt-induction and warmth

(Hoewe, 2017). To examine condition effects, I performed multivariate analysis of covariance (MANCOVA).

Results

Descriptive Statistics and Preliminary Analyses

Participants rated the situation in the vignette (without the reaction of the mother) as relatively relevant ($M = 4.58$, $SD = 1.72$) and believable ($M = 4.95$, $SD = 1.73$). Moreover, they rated each mother's response as relatively common ($M_{GI,nowarmth} = 5.70$, $SD = 1.46$; $M_{GI,warmth} = 5.78$, $SD = 1.37$; $M_{AS} = 5.67$; $SD = 1.52$).

Descriptive statistics and bivariate correlations among the measured variables can be found in Table 1. Bivariate correlations showed that perceived autonomy-support and perceived warmth correlated significantly negatively with emotion dysregulation, while perceived guilt-induction correlated positively with emotion dysregulation and integrative emotion regulation. Furthermore, perceived autonomy-support and warmth correlated significantly positively with each other and each of them correlated significantly negatively with perceived guilt-induction. Finally, both emotion suppression and dysregulation correlated significantly negatively with integrative emotion regulation.

Subsequently, the relation between the background variables and the study variables was examined. Age did relate negatively to emotional suppression ($r = -.15$, $n = 323$, $p = .01$). Given these findings, age was controlled for in all further analyses. A MANCOVA showed that gender, education, marital and job status, country of origin and being a student did not relate significantly to any of the study variables.

To examine between vignettes differences in terms of perceived autonomy-support, warmth, and guilt-induction, I performed a MANOVA with the type of the vignette as an independent fixed factor. The MANOVA indicated a significant

multivariate effect of type of vignette, $F(6,662) = 69.41, p < .001$; Wilk's $\Lambda = 0.377$, partial $\eta^2 = .39$. Using a Bonferroni-adjusted alpha of .016, there was a significant effect of condition on perceived guilt-induction, $F(2,33) = 231.26, p < .001$; partial $\eta^2 = .58$, with scores higher in both guilt-induction conditions ($M_{GI,warmth} = 4.16, SD = 0.83$; $M_{GI,nowarmth} = 3.99, SD = 0.86$) compared to the autonomy-support condition ($M_{AS} = 1.98, SD = 0.84$). Moreover, a significant effect of condition was also found on perceived autonomy-support ($F(2,33) = 147.49, p < .001$; partial $\eta^2 = .47$) and warmth ($F(2,33) = 159.35, p < .001$; partial $\eta^2 = .49$). Specifically, individuals in the autonomy-support condition scored higher on perceived autonomy-support ($M_{AS} = 4.24, SD = 0.85$) than individuals in both guilt-induction conditions ($M_{GI,warmth} = 2.11, SD = 1.13$; $M_{GI,nowarmth} = 2.19, SD = 1.13$). Further, individuals in both guilt-induction conditions scored lower in warmth ($M_{GI,warmth} = 2.26, SD = 1.00$; $M_{GI,nowarmth} = 2.30, SD = 0.94$) than individuals in the autonomy-support condition ($M_{AS} = 4.20, SD = 0.84$). The two guilt-induction conditions (with warmth, no warmth) did not differ with respect to perceived parenting.

Table 1

Correlations between and Descriptives of the Study Variables (Nmin: 323, Nmax: 337)

	<i>M</i>	<i>SD</i>	1	2	3	4	5
Manipulation variables							
1. Autonomy-support	2.84	1.43	-				
2. Guilt-induction	3.39	1.30	-.76**	-			
3. Warmth	2.91	1.30	.87**	-.74**			
Emotion regulation							
4. Integrative emotion regulation	3.60	0.88	-.004	.17**	.01	-	
5. Emotion suppression	2.55	1.08	.10	.04	.11	-.11*	-
6. Emotion dysregulation	3.31	1.12	-.50**	.65**	-.49**	-.11*	-.04

Note. * $p < .05$. ** $p < .01$.

Primary Analyses

A multivariate analysis of covariance (MANCOVA) showed that participants in the autonomy-supportive condition differed significantly from participants in both guilt-induction conditions with regards to the degree of emotion dysregulation, but not emotion suppression and integrative emotion regulation. In particular, as depicted in Table 2, participants in the autonomy-support condition scored significantly lower on emotion dysregulation than participants in both guilt-induction conditions. However, participants in the guilt-induction with warmth condition did not differ significantly from participants in the guilt-induction with no warmth condition with respect to the three emotion regulation styles.

Table 2

Means, Standard Deviations, and One-Way Analyses of Variance related to perceived Autonomy-Support, Guilt-Induction, Warmth and Emotion Regulation.

Measure	AS		GI, warmth		GI, no warmth		<i>F</i> (2,30)	η^2
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>		
Integrative emotion regulation	3.53	0.83	3.67	0.87	3.58	0.96	0.66	.00
Emotion suppression	2.62	1.15	2.53	1.02	2.49	1.09	0.33	.00
Emotion dysregulation	2.42 _a	1.09	3.77 _b	1.00	3.72 _b	0.95	61.08***	.28

Note. AS = Autonomy-supportive vignette; GI = guilt-inducing vignette.

Different subscripts within the same row indicate significant mean-level differences.

*** $p < .001$.

Discussion

Self-Determination Theory has underscored the important role of autonomy-supportive parenting in helping children develop integrative emotion regulation, thereby promoting psychological growth and well-being (Roth et al., 2019). In contrast, although some studies have shown the negative relation between parental psychological control and children's healthy emotional development, some others have doubted such a relation, especially when other parental variables, such as parental rejection, were controlled for (Fung and Lau, 2012; Scharf & Goldner, 2018). This study focused on guilt-induction, a specific form of psychological control which has not been studied extendedly, particularly with regards to emotion regulation. Therefore, the current experimental study aimed to enrich scientific literature and specifically examined the effects of maternal guilt-induction (compared to autonomy-

support) on young adults' emotion regulation and the moderating role of maternal warmth in this relation.

The first hypothesis of the study stating that autonomy-support would result in a higher level of integrative emotion regulation and a lower level of emotion suppression and dysregulation while guilt-induction would show an opposite pattern of effects was partially confirmed. Indeed, participants in the autonomy-support condition reported lower levels of emotion dysregulation than participants in both guilt-induction conditions. These results are in line with previous findings stating that perceived psychological control undermines emotional autonomy and independence, hence it is related with maladaptive patterns of emotion expression (Goger et al., 2020; Manzeske & Stright, 2009).

A surprising result was that perceived guilt-induction related significantly positively with integrative emotion regulation. It is possible that individual's perception of maternal guilt-induction stimulated individuals to employ a higher level of integrative emotion regulation to deal with arising negative feelings. However, the primary analyses showed no significant differences between the three conditions in integrative emotion regulation nor emotion suppression.

Contrary to the initial expectations, the autonomy-support condition was not more characterized by integrative emotion regulation than the two other conditions. This can be explained from the fact that young adults seek support mainly from their friends or partners when confronted with negative situations and feelings (Kerig et al., 2012; Park et al., 2020). Thus, it may be difficult for them to relate to and benefit from the described situation with respect to their emotion regulation. Moreover, the lack of significant relation between induced guilt and emotion suppression may be

interpreted in the light of findings supporting that, young adults, as they grow, tend to use less emotion suppression as an emotion regulation strategy (Park et al., 2020).

The second hypothesis of the study stating that guilt-induction combined with high warmth would result in less dysregulation and suppression compared to guilt-induction combined with low warmth was not confirmed. In contrast, participants in the two guilt-induction conditions (one with high warmth and one with low warmth) did not differ in perceived warmth. This finding may be due to unsuccessful or very subtle manipulation of warmth in this study. Moreover, it appears that youth tend to evaluate more negatively and be less tolerant of parental guilt-induction when it comes to personal issues (Rote & Smetana, 2017). Hence, young adults in this study may have focused more on maternal guilt-induction overlooking mother's expression of warmth.

Strengths, Limitations, and Future Directions

Several strengths of the study are worth mentioning. First, it achieved to enrich scientific literature. I am not aware of any other experimental study examining the effects of maternal guilt-induction on young adult's emotion regulation. Indeed, the study revealed that maternal guilt-induction negatively affects emotion regulation of young adults, as it promoted emotion dysregulation. The employment of an experimental study design permitted the establishment of casual effects of maternal guilt-induction on young adults' emotion dysregulation strengthening the results of the current study. Another strength of the study was the large sample size which fosters the generalization of the findings and makes them more robust.

Several limitations of the study should be considered. First, guilt-induction combined with warmth condition did not manage to convey maternal warmth to young adults. Future research can employ videos instead of vignettes to examine the

moderating role of maternal warmth. Another limitation is that questionnaires provided to Bulgarian participants were not translated in their language of origin, which entails the risk of biased interpretation of the questions. A third limitation of this study is that it focused on maternal parenting, leaving out fathers. Research has shown significant relations between paternal parenting and children's emotional outcomes (Yu et al., 2021), therefore future research should also focus on fathers in the examination of guilt-induction and its relation to emotion regulation.

Practical Implications and Conclusion

The results of the current study have significant practical implications. Given the positive associations of emotion dysregulation with ill-being indicators such as high subjective distress and self-harming behavior (Roth et al., 2019), the contribution of maternal guilt-induction to its development should be taken into consideration. More specifically, mental health services and counselling programs should inform parents about how this form of psychological control may be conveyed to their children and about its adverse outcomes on their young adult's emotion functioning. Moreover, mental health practitioners who work with young adults with emotional problems should expand their scope of their clinical practice and to investigate young adult's relationships with their parents in order to detect problematic interactions which serve to fuel or maintain their struggles.

In sum, this study was the first to show the effects of maternal guilt-induction on young adults' emotion regulation. Specifically, it showed that guilt-induction promoted a higher level of emotion dysregulation than autonomy-support, indicating the negative influence of psychological control on young adults' emotional functioning. However, contrary to expectations, parental autonomy-support did not promote a higher level of integrative emotion regulation and a lower level of emotion

suppression, nor guilt-induction resulted in a higher level of emotion suppression and a lower level of integrative emotion regulation. Furthermore, it failed to support the moderating role of maternal warmth in the relationship between guilt-induction and emotion suppression and dysregulation. Hence, it stimulates future research to employ different measures to test its buffering effects on this relationship.

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Appendix

What is your gender?

Female

Male

Non-binary

Do not want to disclose

What is your age: _____ years

What is the highest degree or level of school you have completed?

If currently enrolled, highest degree received.

Less than a high school diploma

High school graduate or equivalent

Trade/technical/vocational training

Bachelor's degree

Master's degree

Doctorate degree

Other, please indicate _____

What is your marital status?

Single, never married

Partner (not married)

Married

Separated/divorced

Widow(er)

Do you have a job?

Yes, fulltime

Yes, parttime

No

Are you a student?

Yes

No

If you are a student, what study program do you follow?

The next set of questionnaires relate specifically to the situation described below.

Therefore, read the scenario thoroughly, and fill in the following questionnaires with this situation in mind.

Imagine the following 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:

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.”

MY RESPONSE TO THE VIGNETTE

Below you will find several statements about how you would feel when your mother would react in a way as stated in the situation. Indicate a number between 1 (completely disagree) to 5 (completely agree) after each statement.

If my mother reacted this way, I would feel like she...

1. Insists upon doing things her way.
2. Is not very sensitive to my needs.
3. Says kind words about me.
4. Is disappointed with me.
5. Makes it easy for me to talk to her about things that are important to me.
6. Is trying to change how I see things.
7. Tells me I am not as good as she was growing up.
8. Is really interested in my activities.
9. Acts disappointed when I misbehave.
10. Makes me feel that she wants me and needs me.
11. Makes me feel guilty.
12. Uses guilt to control me.
13. Makes me feel like I was doing important things.
14. Tells me that she gets embarrassed when I do not meet her expectations.
15. Is interested in what I think and wants me to discuss it with her.
16. Makes me feel guilty when I do not meet her expectations.
17. Shows me her love.
18. Makes me aware of disappointment.
19. Treats me with affection and kindness.
20. Believes I should be aware of her sacrifices.
21. Expects me to be grateful and appreciative.
22. Says if I really cared for her, I would not do the things that caused her to worry.
23. Tells me of all the things that she has done for me.
24. Allows me to make my own plans for the things I do.

25. Permits me to choose what to do, whenever possible.
26. Is willing to consider my point of view.
27. Allows me to decide things for myself.
28. My mother never reacts like this.

MY RESPONSE TO THE VIGNETTE

Below you will find several statements about how you would feel when your mother would react in a way as stated in the situation. Please indicate a number between 1 (completely disagree) to 5 (completely agree) after each statement

1. It would be hard for me to control my negative emotions (such as sadness or anger).
2. My negative emotions would make me behave in ways I do not feel good about.
3. I would show my negative emotions even if it is not appropriate in that situation.
4. My negative emotions would decrease my ability to function and do things.
5. I would try to hide my negative emotions so my mother would not notice it.
6. I would try to ignore my negative emotions.
7. I would not show my negative emotions to my mother.
8. I would not pay attention to the negative emotions I feel inside myself.
9. I would try to understand the sources of my negative emotions.
10. I would think that negative emotions can help me understand important things about myself.
11. I would think that talking about my negative emotions is useful.
12. My negative emotions could help me understand that my mother is not behaving in a fair or just way.

Please, now read the situation again:

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.

How relevant is the situation as such (without the reaction of the mother):

	Not relevant					Very relevant
at all						
	1	2	3	4	5	6
						7

How believable is the situation as such (without the reaction of the mother):

	Not believable					Very
at all						believable
	1	2	3	4	5	6
						7

Do you think individuals your age ever experiences such a situation?

	Never					Frequently
	1	2	3	4	5	6
						7