

# Is there a Moderating Effect of Parenting on the Relation between Negative Life Events and Generalized Anxiety in Adolescence?

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### **Abstract**

Adolescence is a vulnerable period in which adolescents are more sensitive to negative life events and a period in which these events more often lead to impaired functioning, such as generalized anxiety. This study explored the well-known relation between negative life events and generalized anxiety and additionally the moderating role of parenting styles, responsiveness and psychological control, on this relation. The current study included 833 adolescents between the ages of 11 and 18 years old. The participants filled out several questionnaires to identify their levels of anxiety, their experienced negative life events and the perceived parenting styles. No moderating role was found for responsiveness. However, a negative moderating effect of psychological control of the father was found. More specifically, psychological control of the father had only a negative moderating effect on the relation between negative life events and generalized anxiety when the negative life events occurred recently. Which means that if the levels of psychological control of the father are high and the negative life events occurred recently, the relation between negative life events and child's generalized anxiety is less strong. It can be concluded that parenting styles have a limited impact on the relation between negative life events and generalized anxiety in adolescents. This conclusion makes us question whether adolescence is the best period to investigate the effect of perceived parenting styles on the aforementioned relation. Additional research is necessary to clarify these findings.

### **Introduction**

In childhood and adolescence the prevalence of anxiety disorders is 5 to 25 percent (Brown et al., 2009), which indicates that anxiety disorders are one of the most common forms of psychopathology (Beesdo et al., 2010; Lewis et al., 2011). There are several disorders of anxiety. Generalized anxiety disorder is one of them and occurs most within

adolescents (Angst et al, 2006). The core symptom of generalized anxiety is persistent, excessive and uncontrollable worry (American psychiatric association, 2013). Generalized anxiety disorder is furthermore characterized by restlessness, fatigue, concentration problems, muscle tension and sleep disturbance. It has been suggested that generalized anxiety is a severe disorder which often has an early onset (Dugas, 2000) and which often persist through adulthood (Pfeffer et al., 1988; Keller et al., 1992; Hale et al., 2008; van Oort et al, 2009). Generalized anxiety does not only have a major effect on the life of an adolescent but in addition the environment of people with generalized anxiety suffers as well, which underlines the severity of generalized anxiety (Wittchen, 2002). On the other hand, the people with generalized anxiety can also be influenced by their environment (Kendler et al., 1995). Therefore it is important to identify and understand important key factors which can possibly lead to the onset and maintenance of generalized anxiety. The current study explores the ways in which environment, negative life events and the moderating role of parenting can influence generalized anxiety within adolescents.

Negative life events can be seen as a component of environment, which thence can influence the life of an adolescent. Negative life events are common during the life course (Korten et al., 2014). These events can be defined as any event reported as stressful and which falls outside the normative life experiences of an individual (Rubens et al., 2013). Negative life events in youth can include experiences as parental divorce, child maltreatment, illness or the death of a family member. These events can be very stressful for an adolescent. Negative life events that occur early in an individual's life, such as during adolescence, often lead to impaired functioning (Billing et al., 1981) and may result in the development of psychopathology (Rubens et al, 2013). More specifically, negative life events are environmental stressors which play a role in the development of childhood anxiety disorders (Allen, Rapee, & Sandberg, 2008; Edwards, Rapee, & Kennedy, 2010). Research with

adolescent twins, controlling for genetic influences, suggests that negative events are positively related to both the onset and expression of anxiety (Eley et al., 2000). Additionally, adolescents have reported themselves that negative life events have long-lasting effects on individual's world. The events had a considerable impact on their life's (Park, 2010).

It is important to investigate the effect of negative life events on generalized anxiety in adolescence. The effect of negative life events seems stronger within adolescents compared to children (Lewis et al., 2012). Even though anxious children experience a greater number of life events (Boer et al., 2002; Broeren et al., 2013) and anxious children reported a greater impact of negative live events (Boer et al., 2002). Adolescents who were exposed to negative events showed more anxious symptoms in comparison to children who were exposed to negative events (Lewis et al., 2012). This suggests that life events are highly positive correlated with anxiety in youth (Lewis et al., 2012). This is in accordance with the study of Zahn-Waxler, Klimes-Dougan and Slattery (2000) which suggests that adolescents show an increased vulnerability to develop psychopathology in general. Between the age of 15 and 18 there is an increase in prevalence of psychopathology within adolescents (Zahn-Waxler et al., 2000). It is now well established that adolescence is a vulnerable period in which adolescents are more receptive for negative life events. Moreover, the events which occur in adolescence more often leads to impaired functioning such as generalized anxiety symptoms (Zahn-Waxler et al., 2000; Lewis et al., 2012; Boer et al., 2002; Broeren et al., 2013).

The current study investigates the well-known effect between negative life events and generalized anxiety in adolescence. However, the relation between negative life events and anxiety fluctuates noticeably between individuals (Eley et al., 2000). The present study fills a gap in the literature by investigating whether several parenting styles could moderate the aforementioned relation. As mentioned before, parenting can be seen as a component of environment. The evidence linking parenting to adolescent outcomes such as social-emotional

functioning and mental health is unequivocal (Grusec, 2011; Rapee, 2012; Waite and Cresswell, 2015). Research suggests that parenting styles play an important role in the onset and maintenance of anxiety in youth (Rapee, 2012). Parenting can be divided into different aspects. Two important aspects of parenting, responsiveness and psychological control, were used to determine whether parenting can influence the relation between negative life events and generalized anxiety. These two constructs were used because these parenting styles can be influential in the interpretation of negative life events by the adolescent (Zhou et al, 2008) as well as in the development and maintenance of anxiety disorders within adolescents (Waite and Creswell, 2015). Psychological control is a parenting style, characterized by pressuring and manipulative strategies such as love withdrawal, guilt induction and conditional approval (Barber, 1996) which causes a sense of helplessness and a low self-esteem within adolescents (Settipani et al, 2013). Parental responsiveness is defined as the extent to which parents intentionally foster individuality, self-regulation and self-assertion by being attuned, supportive and acquiescent to children's special needs and demands (Baumrind, 1996). There is evidence showing that psychological control is positively related to internalized distress and anxiety in adolescents (Soenens et al., 2010; Pettit et al., 2001). More specifically, young individuals who experienced high levels of psychological control have limited ability to manage their emotions (Barber, 1996) and may therefore have more difficulties to cope with stressors (Settipani et al, 2013) such as negative life events. Following this line of reasoning, high levels of psychological control could have a potential negative influence on developing and maintaining generalized anxiety symptoms. Parental responsiveness is positively linked with well-being of an adolescent (Hill et al, 2003) and negatively correlated with psychological symptoms (Fletcher et al, 1999). Following this line of reasoning, high levels of responsiveness could have a potential buffering effect on developing generalized anxiety symptoms after experiencing a negative life event.

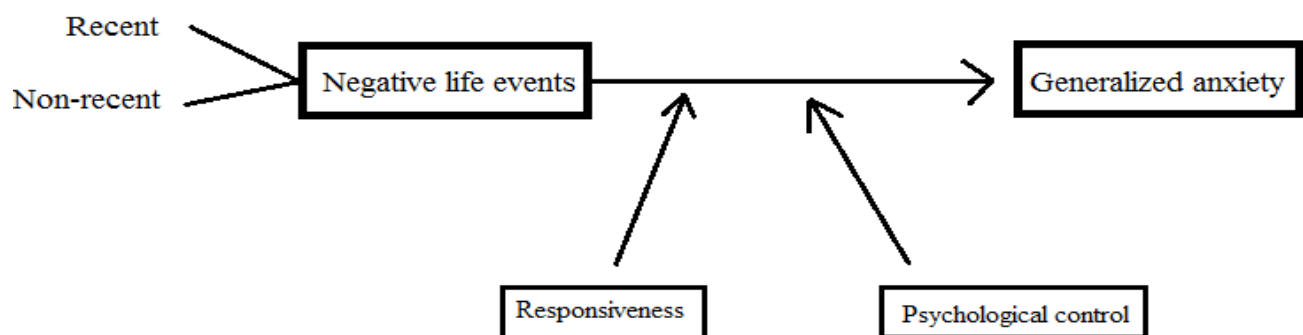
When looking at the possible moderating effect on the relation between negative life events and generalized anxiety, it is interesting to consider both the mother and the father. This is interesting because studies which examined both mothers' and fathers' parenting found considerable overlap but differences as well (Horvath et al., 2015). Mothers' responsiveness and fathers' responsiveness are both negatively correlated with psychological symptoms (Fletcher et al, 1999). In contrast, within maternal and paternal psychological control there were found differences. The perceived paternal psychological control is higher within youth with an anxiety disorder compared with youth without an anxiety disorder (Wei et al, 2014). This difference is not found with maternal psychological control (Wei et al, 2014). These findings suggests that paternal psychological control may have a higher positive moderating effect on the relation between negative life events and generalized anxiety. Following this line of thought, there is no difference in the moderating role of mother or father regarding parenting responsiveness (i.e., significant negative moderating effect for both the father and the mother) but there is a difference in the moderating role between mother and father regarding psychological control (i.e., the positive moderating effect is greater regarding the father).

The relation between negative life events and generalized anxiety may also fluctuate due to the differences in non-recent and recent negative life events. In the present study recent negative life events are events which occurred in the 12-month period before the questionnaire took place. Non-recent negative life events are events which took place before the 12-month period. Very little is known about the differences in non-recent and recent negative life events. Whether there is a difference between recent and non-recent negative life events in the influence on the relation between negative life events and generalized anxiety, is an explorative research question in this study. It has been known that adolescents who are anxious reported a greater number of experienced negative live events in the 12-month period

before the questionnaire took place compared to longer ago (Allen et al, 2008; Goodyer et al., 1988, 1990; Broeren et al., 2013). This suggests that recent negative life events have a higher impact on the onset of generalized anxiety. It seems logical that environmental effects have a higher influence if the levels of generalized anxiety are at their highest. This suggests that when the negative life events occurred recently, the moderating effect of parenting styles is greater compared to when the negative life events occurred non-recently.

If we want to understand the high rates of anxiety disorders in adolescents, examination of environmental stressors specially related to the onset and maintenance of anxiety is necessary. This background leads to the following research questions: Is there a moderating effect of parental responsiveness on the relation between negative life events and anxiety within adolescents? And is there a moderating effect of psychological control on the relation between negative life events and anxiety within adolescents? Besides the main research questions, the difference between mother and father with regards to the moderating role of parenting will be investigated as well. This leads to the following sub question: Is there a difference between paternal and maternal parenting styles regarding the relation between negative life events and generalized anxiety? The difference of impact between non-recent and recent life events will be investigated as well. This leads to another sub question: Is the moderating effect greater regarding recent negative life events compared to non-recent negative life events? These research questions lead to the following hypotheses: (1) high levels of parental responsiveness have a buffering effect on developing generalized anxiety symptoms after experiencing a negative life event (i.e., if the levels of responsiveness are high, the relation between negative life events and child's generalized anxiety will be less strong). (2) There is no difference found in the moderating effect of responsiveness between mothers and fathers . (3) High levels of psychological control have a positive moderating effect on developing generalized anxiety symptoms after experiencing a negative life event

(i.e., if the levels of psychological control are high, the relation between negative life events and child's generalized anxiety will be stronger). (4) The positive moderating effect is stronger for psychological control of the father compared to the moderating effect of psychological control of the mother. (5) The moderating effect is stronger when the negative life events occurred recently compared to non-recently. To answer all hypotheses age and gender will be used as control variables to determine the unique moderating effects. This because research has shown that girls and boys are different in the way they interpret negative life events (Lewis et al., 2012) and girls do often experience a higher level of anxiety compared to boys (Angst et al., 2006). The way children interpret negative life events is also dependent of their age (Waite and Cresswell, 2015).



*Figure 1*  
*Conceptual model*

## Methods

### Participants

The adolescents were recruited for the Study of Personality, Adjustment, Cognition and Emotion (SPACE) from four different high schools in the Netherlands. Respondents were only included if important constructs for this study (e.g., negative life events, anxiety, and parenting) were filled out. A total of 833 respondents were included in this study. Just over half the sample (54.4%) were boys. The age of the participants varied between 11 and 18



years old ( $M = 13.89$ ,  $SD = 1.1$ ). The participants were all situated in the first, second or third class of high school. Most of the participants had the Dutch nationality (65.2%). Followed by Turkish (7.1%) and Moroccan (6.6%). This study also included adolescents from Suriname (5.2%) and other countries (15.9%).

### **Procedure**

This research project was approved by the Institutional Review Board. First, permission of school principals was obtained to administer questionnaires during class time. Next, the parents of the respondents were informed via a detailed letter describing the content and goals of this study. The parents were given the opportunity to block the participation of their children. Afterwards, adolescents were informed about the study and were asked for their participation. After receiving permission of the respondents themselves, master students of Tilburg University visited the schools and asked the adolescents to fill out the questionnaire. These master students were available for questions about the questionnaire during the filling out process. The fill out process took place in 2014.

### **Measures**

**Negative life events.** Negative life events were assessed using a shortened version of the Life Events Questionnaire (Garnefski & Kraai, 2001). For this study the shortened version was used to maintain the concentration of the adolescents during the fill out process. The shortened version of the Life Events Questionnaire consists out of 12 items. These statements, for example “death of a sibling”, can be answered by choosing one out of three options. The three options are: “no”, “yes, more than 12 months ago” or “yes, in the past 12 months”. To determine whether recent or non-recent is more influential on the increase of generalized anxiety, scores on negative life events were divided into two groups. Negative life events which occurred in the last 12 months were described as recent negative life events. Negative

life events which occurred before the first measurement are described as non-recent negative life events.

**Parenting.** The two constructs of parenting were assessed using the Leuven Adolescent Perceived Parenting Scale (LAPPS) (Delhayé et al., 2012). This questionnaire consists out of 35 statements. The LAPPS measures responsiveness mother (e.g., “my mother often smiles at me”), psychological control mother (e.g., “my mother often interrupts me”), responsiveness father (e.g., “my father gives me great care and attention”) and psychological control father (e.g., “my father blames me for the problems of other family members”). All statements were answered on a five points scale from 1= *not at all* to 5= *completely true*, which resulted in a total score from 35 to 175 on the total questionnaire. When the total score of responsiveness is high, the level of responsiveness is high as well. The same for psychological control, which means that when the total score of psychological control items is high, the level of psychological control is high as well. The internal consistency of responsiveness is  $\alpha = .91$  for both the mother and the father. The internal consistency of psychological control is  $\alpha = .84$  for the mother and  $\alpha = .78$  for the psychological control of the father (Delhayé et al., 2012). The LAPPS showed an differential pattern of associations with an alternative measure (i.e., the Emotional Autonomy Scale: EAS) in French speaking respondents. Therefore LAPSS is an valid measure (Delhayé et al., 2012).

**Anxiety.** Anxiety is measured using Screen for Child Anxiety Related Emotional Disorders (Muris et al., 1998). The study SPACE used a shortened version of the SCARED. The shortened version of the SCARED consisted out of 9 statements and measured social anxiety and generalized anxiety. In this study only generalized anxiety was used, which was investigated by four items (e.g., “I am worried about the future”). All statements were answered on a three points scale from 1= *nearly never* to 3= *often*, which resulted in a total score from 4 to 12. The higher the score, the higher the level of the child’s generalized

anxiety. The internal consistency for generalized anxiety within the SCARED is  $\alpha = .74$  (Muris et al., 1998).

### **Statistical analyses**

All statistical analyses were carried out using SPSS, version 23.0. The analyses which were conducted are cross-sectional, as shown in figure 1. First, background information of the adolescents in this study was explored, using descriptive statistics. Respondents were excluded if they did not fill out all the items which measure important constructs for this study (e.g., negative life events, generalized anxiety, and parenting). A correlation analysis was used to investigate the correlation between negative life events, psychological control, responsiveness and generalized anxiety.

Hierarchical regression analyses were used to investigate the cross-sectional relation between negative life events and generalized anxiety and the potential moderating effect of psychological control and responsiveness on this relation. A moderator analysis investigates whether a moderator (eg., responsiveness and psychological control) has an effect on the relation between negative life events and generalized anxiety. The dependent variable is generalized anxiety for all regression analyses. Before the regression analyses were conducted, the independent variables and moderating variables were turned into centralized variables by subtracting its mean from all its values. Afterwards interaction variables were calculated by multiplying the centralized values of parenting and the centred values of negative life events. This is done separately for each measure of parenting, responsiveness and psychological control, for both the mother and the father. At first, a four stage hierarchical multiple regression was conducted with responsiveness as possible moderator. The control variables gender and age were entered at stage one of the regression. The variable negative life events, both recent and non-recent, was entered at stage two. The moderator variables (responsiveness of the mother and responsiveness of the father) were entered at

stage three. In the fourth stage the interaction terms were entered (negative life events x responsiveness of the mother, negative life events x responsiveness of the father). Afterwards, this was also conducted for the other moderator variables (psychological control of the mother and psychological control of the father), whereas the dependent variable, stage one and stage two stayed the same. Psychological control was entered at stage three. In the fourth stage the interaction terms were entered (negative life events x psychological control of the mother, negative life events x psychological control of the father).

The first sub research question requires looking at the difference between mother and father. For both responsiveness and psychological control two hierarchical regression analyses were conducted whereas in one only the mother and in the other only the father was incorporated. The other sub research question requires looking at the difference between recent and non-recent negative life events. If a moderation effect is found, this exploratory additional analysis will be done for the moderation effect. Interactive variables will then consist out of only recent negative life events and the parenting style in which a moderation effect was found before. The same will be done for non-recent negative life events. Afterwards, a two stage hierarchical regression will be conducted two times. In the two hierarchical regression analyses the control variables, recent or non-recent negative life events and the specific parenting style will be entered at stage one. At stage two the interaction variables were entered, one regression with recent negative life events and the other with non-recent negative life events to determine the difference.

## **Results**

The correlation analysis revealed that there was a significant correlation between all variables which are used for this study (negative life events, generalized anxiety of the child,

responsiveness of the mother and the father and psychological control of the mother and the father).

Table 1

*Pearson's correlations for generalized anxiety, negative life events, responsiveness and psychological control*

|                                  | 1 | 2      | 3       | 4       | 5       | 6       |
|----------------------------------|---|--------|---------|---------|---------|---------|
| Neg. life events (1)             | 1 | .21*** | -.16*** | -.25*** | .18***  | .13***  |
| Generalized anxiety (2)          |   | 1      | -.17*** | -.14*** | .25***  | .15***  |
| Responsiveness mother (3)        |   |        | 1       | .47***  | -.38*** | -.20*** |
| Responsiveness father (4)        |   |        |         | 1       | -.19*** | -.21*** |
| Psychological control mother (5) |   |        |         |         | 1       | .56***  |
| Psychological control father (6) |   |        |         |         |         | 1       |

*Note.* \* =  $p < .05$ , \*\* =  $p < .01$ , \*\*\* =  $p < .001$   $N=833$

To answer all five hypotheses hierarchical regressions were used. The control variables, age and gender, explained a significant 4.7 percent of the variances in generalized anxiety in all regression analyses,  $F(2, 827) = 20.38, p < .001$ . The control variables were both significant. Girls and older children in general experienced a higher level of generalized anxiety. In step two of all regression analyses the variable negative life events was added, which explained another 3.7 significant percent of the variances in generalized anxiety,  $F(1, 826) = 33.43, p < .001$ . The other steps of the regression analyses contain different subjects with regards to the relation between negative life events and generalized anxiety and therefore these will be explained separately.

#### *Parental responsiveness*

To investigate whether high levels of responsiveness have a buffering effect on the relation between negative life events and generalized anxiety a four stage hierarchical regression was

used. In the third step responsiveness of the father and the mother were added, which explained an additional and significant 2 percent of the variances in child's generalized anxiety,  $F(2, 824) = 9.3, p < .001$ . The relation between responsiveness of both the mother and the father and generalized anxiety is negative. This relation is only significant with regard to responsiveness of the mother. This means that if the levels of responsiveness of the mother are high, the levels of child's generalized anxiety will be low. At last the interaction terms of negative life events and responsiveness were added. These were not significant,  $F(2, 822) = 1.65, p = .19$ . The interaction between responsiveness and negative life events is not significant. This means we cannot conclude that responsiveness has a potential buffering effect on the relation between negative life events and generalized anxiety, wherefore hypothesis one can be rejected.

Table 2: *Regression analysis responsiveness of the mother and the father*

|   | $\Delta R^2$ | t     | $\beta$ | Total R |
|---|--------------|-------|---------|---------|
| Responsiveness                                      | .02***       |       |         | .32     |
| Mother  |              | -3.42 | -.13**  |         |
| Father  |              | -0.81 | -.03    |         |
| Interaction (responsiveness x negative life events) | .004         |       |         | .33     |
| Mother  |              | -1.34 | -.06    |         |
| Father  |              | -.25  | -.01    |         |

Note. \* =  $p < .05$ , \*\* =  $p < .01$ , \*\*\* =  $p < .001$  N=833

When looking at the responsiveness of the father and the responsiveness of the mother separately, two hierarchical regression analyses were used. The responsiveness of the father explained an additional and significant 0.7 percent of the variances in generalized anxiety,

$F(1, 826) = 6.77, p < .01$ . At last the interaction term of negative life events and responsiveness of the father was added. This was not significant,  $F(1, 825) = 0.98, p = .32$ .

Table 3: *Regression analysis responsiveness of the father*

|  | $\Delta R^2$ | t    | $\beta$ | Total R |
|--|--------------|------|---------|---------|
| Responsiveness father                                      | .007**       | -2.6 | -0.09** | .30     |
| Interaction (responsiveness father x negative life events) | .001         | -1.0 | -0.04   | .30     |

Note. \* =  $p < .05$ , \*\* =  $p < .01$ , \*\*\* =  $p < .001$  N=833

The responsiveness of the mother explained an additional and significant 2.0 percent of the variances in generalized anxiety,  $F(1, 825) = 17.95, p < .01$ . At last the interaction term of negative life events and responsiveness of the mother was added. This was not significant,  $F(1, 824) = 2.87, p = .09$

Table 4: *Regression analysis responsiveness of the mother*

|  | $\Delta R$ | t     | $\beta$ | Total R |
|--|------------|-------|---------|---------|
| Responsiveness mother                                      | .02***     | -4.2  | -.14    | .32     |
| Interaction (responsiveness mother x negative life events) | .003       | -1.69 | -.06    | .33     |

Note. \* =  $p < .05$ , \*\* =  $p < .01$ , \*\*\* =  $p < .001$  N=833

For both the mother and father no interaction effect is found, which suggests that there is no difference between the father and the mother regarding responsiveness. This is not in accordance with hypothesis two, which suggested that both the responsiveness of the mother and the father have a negative moderating effect on the relation between negative life events and generalized anxiety.

*Psychological control*

A hierarchical regression analysis, which was used to investigate the moderating effect of psychological control on the relation between negative life events and generalized anxiety, demonstrated that a significant 5.2 percent of the variances in child's generalized anxiety was explained by psychological control of the mother and the father,  $F(2, 823) = 24.72, p < .001$ . The additional 0.9 percent of explained variances in generalized anxiety, due to the interaction terms, is significant,  $F(2, 821) = 4.56, p = .01$ . There is a significant positive association between psychological control of the mother and generalized anxiety. It means that when the levels of psychological control of the mother are high, the levels of generalized anxiety will be high as well. No significant association is found between psychological control of the father and generalized anxiety. However, a significant interaction effect is found. Which means that levels of psychological control affects the relation between negative life events and generalized anxiety. Whether this is a positive or negative effect should be investigated by looking separately to the psychological control of the mother and the father.

Table 5: *Regression analysis psychological control of the mother and the father*

|  | $\Delta R^2$ | t    | $\beta$ | Total R |
|--|--------------|------|---------|---------|
| Psychological control                                      | .05***       |      |         | .37     |
| Mother   |              | 5.81 | .23***  |         |
| Father   |              | .11  | -.004   |         |
| Interaction (psychological control x negative life events) | .009**       |      |         | .38     |
| Mother   |              | .59  | .03     |         |
| Father   |              | -.26 | -.12*   |         |

Note. \* =  $p \leq .05$ , \*\* =  $p \leq .01$ , \*\*\* =  $p \leq .001$  N=833



First, psychological control of the mother was investigated. The psychological control of the mother explained a significant 5.2 percent of the variances in generalized anxiety of the child,  $F(1, 824) = 49.5, p < .001$ . There is no significant moderating effect found for the psychological control of the mother,  $F(1, 823) = 2.6, p = .11$ .

Table 6: *Regression analysis psychological control of the mother*

|   | $\Delta R^2$ | t    | $\beta$ | Total R |
|---|--------------|------|---------|---------|
| Psychological control mother                                      | .05***       | -2.6 | .23***  | .37     |
| Interaction (psychological control mother x negative life events) | .003         | -1.0 | 7.04    | .37     |

Note. \* =  $p < .05$ , \*\* =  $p < .01$ , \*\*\* =  $p < .001$  N=833

When looking for the psychological control of the father, there was a positive significant association found between psychological control of the father and generalized anxiety. Psychological control of the father explained a significant and extra 1.7 percent of the variances in generalized anxiety,  $F(1, 826) = 15.23, p < .001$ . However the aforementioned effect should not be interpreted because a negative significant moderating effect is found as well. This means that if the level of psychological control of the father is high, the relation between negative life events and generalized anxiety will be less strong. This interaction explained another 1.2 percent of the variances,  $F(1, 825) = 10.95, p < .001$

Table 7: *Regression analysis psychological control of the father*

|   | $\Delta R^2$ | t     | $\beta$ | Total R |
|---|--------------|-------|---------|---------|
| Psychological control father                                      | .017***      | 3.90  | 0.13*** | .32     |
| Interaction (psychological control father x negative life events) | .012***      | -3.31 | -.12**  | .34     |

Note. \* =  $p < .05$ , \*\* =  $p < .01$ , \*\*\* =  $p < .001$  N=833

For both the father and the mother a positive effect is found between psychological control and generalized anxiety. This means that if the levels of psychological control is high, the levels of generalized anxiety will be high as well. However, there is a difference found between mother and father regarding the moderating effect. On one hand there is no significant interaction term found regarding psychological control of the mother. On the other one there is a significant interaction effect found regarding psychological control of the father. This means that if the levels of psychological control of the father are high, the relation between negative life events and generalized anxiety will be low. These results are not in accordance with the hypothesis which stated that the moderating effect of psychological control of the father is larger (i.e., more positive) compared to the mother.

#### *Recent versus non-recent*

As mentioned before, only a moderating effect of psychological control of the father is found. Therefore the difference between recent and non-recent negative life events on child's generalized anxiety was only investigated for this effect. The moderating effect of psychological control of the father is only found among recent negative life events. The effect is negative which means that when the negative life events occurred recently and the psychological control of the father is high, the relation between negative life events and generalized anxiety will be less strong.

Table 8: *Psychological control of the father and recent versus non-recent negative life events*

|   | $\Delta R^2$ | $\beta$ | Total R |
|---|--------------|---------|---------|
| Interaction recent (x psychological control father)     | .01**        | -.12**  | .36     |
| Interaction non-recent (x psychological control father) | .003         | -.06    | .28     |

*Note.* \* =  $p < .05$ , \*\* =  $p < .01$ , \*\*\* =  $p < .001$   $N=833$

## Discussion

The current study investigated whether several parenting styles could moderate the relation between negative life events and generalized anxiety. More specifically, this study wanted to take a closer look at responsiveness and psychological control and if these parenting styles could change how adolescents cope after they experienced a negative life event.

The assumption that high levels of parental responsiveness could make the relation between negative life events and generalized anxiety less strong was not confirmed in the present investigation. This because no moderating effect was found for both the responsiveness of mother and father, which is therefore not in accordance with hypothesis one and two. The assumption that high levels of psychological control could make the relation between negative life events and child's generalized anxiety stronger is not found as well. However, an interaction effect of psychological control was found, which means that psychological control can influence the relation between negative life events and child's generalized anxiety. The analyses which were used to investigate the difference between mother and father only showed a significant negative moderating effect of psychological control of the father. This means that if the levels of psychological control are high within the father of the child, the levels of child's generalized anxiety after experiencing a negative life event, are lower. This suggests that high levels of psychological control of the father could positively influence the way their child interprets and copes with negative life events. This is interesting because it is exactly the opposite of what was stated in the hypotheses. At last, this study found that only when the negative life events occurred recently, psychological control influences the relation between negative life events and child's generalized anxiety. This outcome suggests that psychological control of the father only positively affects the way children cope after experiencing a negative life event which occurred recently.

A moderating role of responsiveness is not found, which can possibly be explained by taking a closer look at adolescence. Adolescence is a period in which it is important for the adolescents to separate themselves from their parents (Steinberg, 2001). The relation between parents and adolescents may therefore be different compared to the relation between parents and younger children. Additionally, during adolescence children change. Along with that it changes what they want and need from their parents, hence adolescents may look differently at the parenting styles. Because adolescents want to distance themselves from their parents and want to gain autonomy, they may find parental responsiveness less important. If adolescents evaluate responsiveness of the parents as less needed, the impact of parental responsiveness in this period could be low. Therefore parental responsiveness could possibly not change the way their children cope after experiencing a negative life event and could not change the relation between negative life events and generalized anxiety in adolescence.

The assumption that psychological control negatively influences the relation between negative life events and generalized anxiety of the child should also be looked at in a different way concerning the results of the present study. As mentioned before, adolescence is a period in which the relation between children and parents change partly due to the autonomy adolescents want to receive. Research suggests that parenting of anxious adolescents may involve lower levels of warmth and higher levels of rejection/hostility compared to parenting of anxious children (Waite and Cresswell, 2015). In addition, parental control stays of great relevance in adolescence (Waite and Cresswell, 2015). The difference in parenting between children and adolescents has not been addressed in most existing research. Most of the existing research used pre-adolescent children (e.g., Wei et al., 2014; Barber, 1996; Pettit et al., 2001) or used both children and adolescents together as one measure in their analyses (e.g., Settapani et al., 2013). The difference in parenting between children and adolescents is an interesting finding which may explain the negative moderating effect of psychological control

in the present study. If adolescents want to gain autonomy, receiving warmth from their parents could become less important. On the other side higher levels of rejection/hostility, which can be seen as higher levels of psychological control, is experienced as important, also in a good way by adolescents, because it helps them to gain autonomy. There is research suggesting that parental control and autonomy of the child positively correlates (Silk et al., 2003). Adolescents could possibly want to deal with negative life events by themselves. If the adolescents gained their autonomy due to higher levels of psychological control, they actually could deal with the negative life events they experience by themselves. This could possibly explain that higher levels of psychological control can be seen as a buffering effect (e.g., negative effect) on the relation between negative life events and child's generalized anxiety within adolescence. Additionally, the findings of the current study suggest that if the adolescents gained their autonomy due to higher levels of psychological control, they actually could deal better with recent negative life events compared to non-recent negative life events they experienced. Recent negative life events occurred within 12 months before the questionnaire took place. If it happened more than one year before the questionnaire took place, the respondents possibly were not an adolescent yet. Therefore the aforementioned explanation with regards to gaining autonomy does not work for non-recent negative life events. It does work when the negative life events occurred recently, which means most of the respondents were already an adolescent and were already busy with gaining autonomy, whereby high levels of psychological control of the father helped them.

However, the aforementioned explanation with regards to gaining autonomy does not work for psychological control of the mother. Research already stated that paternal psychological control has a higher influence (Wei et al., 2014) on adolescents. The difference is possibly due to differences in parenting style between the father and the mother. The father is most of the time seen as the parent with the most authority (Rapee, 2012), whereas it seems

logical that the father has more influence and the father could help the children better by gaining autonomy due to high levels of psychological control. Though the mother could influence the children due to high levels of psychological control. The direct and positive effect of psychological control of the mother on generalized anxiety is found in the current study, which underlines that psychological control of the mother is positively related to internalized distress and anxiety in adolescents (Soenens et al., 2010; Pettit et al., 2001).

In summary, it can be concluded that parenting styles have a limited impact on the relation between negative life events and generalized anxiety in adolescents. This conclusion make us question whether adolescence is the best period to investigate the effect of perceived parenting styles on the relation between negative life events and generalized anxiety. The results of this study need to be evaluated against several strengths and weaknesses of the research methods. Strengths of this study involve the large sample size and the usage of two parenting styles. There are also several limitations to this research methods and outcomes. First, adolescents filled out the questionnaire regarding the different constructs of parenting whereas there was no comparative data of the constructs of parents available. Adolescence is a period which is characterized by the gathering of autonomy whereby adolescents want to distance themselves from their parents. Therefore they may interpret the behaviour of their parents differently, which can influence the gathered data. Second, the current study did not measure the level of autonomy of the child. Third, this study used cross-sectional data. Further research should carefully consider which ages they want to include. Adolescence is a difficult period to draw conclusions, however more research is needed whereby only respondents in the adolescence period should be included. Moreover, the autonomy level of the child should be taken into account for better conclusions about the possible impact of the level of psychological control on the relation between negative life events and child's generalized anxiety. For better outcomes, a longitudinal design is preferred. This because the

levels of child's generalized anxiety is measured over time, whereby the long-term effect of psychological control on the relation between negative life events and child's generalized anxiety could be investigated. Furthermore, the parenting styles should be measured less subjectively for better outcomes. This can be done by letting more children of one family fill out the questionnaire about their parents. At last, recent and non-recent negative life events should be investigated separately to further investigate the interesting difference which was found in the current study. Such information may help develop interventions that will improve child's generalized anxiety and hence the quality of life of children with high levels of anxiety.

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