

**MATERNAL BIG FIVE PERSONALITY TRAITS, MATERNAL WARMTH AND INTERNALIZING
PROBLEMS IN EARLY- AND MID-ADOLESCENCE:
A MEDIATION MODEL**

Master Thesis by Amy Meesters and Anna Morren

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Preface

Dear reader,

The article you are currently reading is our Master thesis, which is written for the Master Programme Orthopedagogy at Utrecht University. We have been busy researching and writing this thesis since October 2013. We started off with a literature study on maternal personality, maternal warmth and anxious- and withdrawn problems in adolescents. Later on, we were able to test our hypotheses, using a pre-existing dataset. After eight months of hard work, this is our final result. Despite the fact that the Master Programme has been intensive, we can gladly say that the time we have spent working on our Master thesis has been pleasant and informative. The fact that we are both interested in the subject, combined with a pleasant co-operation and many cups of coffee at the Utrecht University canteen, made the process a success. With the completion of the thesis we get to take the next step into our future careers, which is something that makes us happy as well as a little bit sad. We will both miss the pleasant co-operation we have had for the past year.

Firstly, we would like to thank our thesis advisor, Amaranta de Haan, for providing us several times with useful feedback. She helped make this research process a success. Her encouraging words gave us new energy and motivation to keep going.

Secondly, we would like to thank our families and friends. We have been able to count on them for support, understanding and motivating words. Thank you all for this.

Amy Meesters & Anna Morren

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Abstract

The current study attempted to investigate to what extent maternal 'Big Five' personality characteristics (extraversion, agreeableness, conscientiousness, emotional stability and autonomy) are related to anxious- and withdrawn problems in adolescents between 12 and 15 years old. In addition to this, the current study also attempted to investigate mediation by maternal warmth. The research population consisted of 615 adolescents (49.9% boys, 50.1% girls). Maternal personality was assessed using maternal self-reports on the Five-Factor Personality Inventory (FFPI). Anxious- and withdrawn problems were assessed using adolescent self-reports on the subscales Anxiety/Depression and Withdrawal/Depression of the Youth Self Report (YSR). Maternal warmth was assessed using self-reports on the Warmth/Involvement subscale of the Parenting Practices Questionnaire (PPQ). The hypotheses were tested using the Baron and Kenny method. The current study found that adolescents with more emotional stable mothers had less anxious problems, and adolescents with more extraverted and conscientious mothers had less withdrawn problems. The current study found a link between more maternal extraversion and agreeableness and more maternal warmth. A relation between maternal warmth and internalizing problems was not found.

Samenvatting

Het huidige onderzoek trachtte te bepalen in welke mate er sprake is van een relatie tussen 'Big Five' persoonlijkheidskenmerken van moeders (extraversie, mildheid, ordelijkheid, emotionele stabiliteit en autonomie) en angstige- en teruggetrokken problemen bij adolescenten tussen 12 en 15 jaar oud. Daarnaast is onderzocht of deze verbanden worden gemedieerd door moederlijke warmte. De onderzoekspopulatie bestond uit 615 adolescenten (49,9% jongens, 50,1% meisjes). Moederlijke persoonlijkheidskenmerken zijn gemeten middels zelfrapportages op de Five-Factor Personality Inventory (FFPI). Angstig- en teruggetrokken gedrag is gemeten middels zelfrapportages op de subschalen Angst/ Depressie en Teruggetrokken/Depressie op de Youth Self Report (YSR). Moederlijke warmte is gemeten middels zelfrapportages op de subschaal Warmte/Betrokkenheid van de Parenting Practices Questionnaire (PPQ). De hypothesen zijn getest middels de Baron en Kenny-methode. Dit onderzoek vond een verband tussen meer emotionele stabiliteit bij moeders en minder angstige problemen, en tussen meer extraverte en ordelijke moeders en minder teruggetrokken problemen bij adolescenten. Het onderzoek vond ook een relatie tussen meer moederlijke extraversie en mildheid en een hogere mate van moederlijke warmte. Er is geen relatie gevonden tussen moederlijke warmte en internaliserende problemen bij adolescenten.

Introduction

Internalizing problems such as anxiety, depression and withdrawn problems can seriously obstruct emotional and cognitive development in adolescents, and may be of even greater influence on cognitive functioning than intelligence during adolescence (Achenbach, 1991a; Rapport, Denney, Chung, & Hustace, 2001). Research showed that both anxiety and withdrawn behavior are associated with academic problems, an impaired social-cognitive development, more peer rejection and difficulty with regulating emotions in adolescence (Cohn & Campbell, 1992). Although anxious and withdrawn problems are related, a distinction between the two types of symptoms is important. For example, anxious and withdrawn symptoms are associated with different ways of maladaptation. Therefore, the current study distinguishes between the two types of internalizing problems.

Previous studies have shown that maternal personality characteristics are more important than paternal characteristics (Connell & Goodman, 2002; Luthar, Cushing, & McMahon, 1997). For this reason, it was decided to include only maternal personality traits in the current research. Maternal personality traits are related to a wide variety of children's developmental problems, such as anger, less secure attachment and defiance (Kochanska, Clark, & Goldman, 1997). Similarly, maternal personality characteristics are likely to be related to internalizing problems. It is surprising that there has not been a lot of research done on the relation between maternal personality characteristics and internalizing problems in adolescents. The current study attempts to expand the existing knowledge base on this matter. Since internalizing behavior problems increase in adolescence (Angold & Rutter, 1992; Bongers, Koot, van der Ende, & Verhulst, 2003), the current study focuses on young and middle adolescents between the age of 12 and 15 years old. Since the prevalence rate of internalizing disorders in girls exceeds that of boys (Angold & Rutter, 1992; Bongers, Koot, van der Ende, & Verhulst, 2003), it was decided to use gender as a control variable.

Maternal warmth or responsiveness refers to parenting behavior aimed at "intentionally fostering individuality, self-regulation, and self-assertion by being attuned, supportive, and acquiescent to the child's special needs and demands" (Baumrind, 1991, p. 62). Maternal warmth is a frequently studied aspect of maternal support (Barnes & Farrell, 1992). Warm parenting, usually associated with more optimal outcomes, has proven to prevent children from developing internalizing problems (Deković, 1999; Greenberger, Chen, Tally, & Dong, 2000). Maternal personality characteristics are often linked to parenting orientations as well as parenting behaviors (Kochanska, Clark, & Goldman, 1997). A meta-analysis examining relations between maternal personality traits and several parenting

dimensions found a link between certain maternal personality traits and warm parenting (Prinzle, Stams, Deković, Reijntjes, & Belsky, 2009). The current study attempts to examine the prospective relations between maternal personality characteristics (2001) and internalizing problems in adolescents, assessed six years later (2007). Additionally, mediation of these relations by maternal warmth, assessed in 2004, is examined.

Maternal personality, maternal warmth and internalizing problems

The most conventional way to measure personality is by using the comprehensive and systematic Five Factor Model (Goldberg, 1990; John, 1990; John & Srivastava, 1999). The Five Factor Model distinguishes five dimensions of personality, also known as the Big Five, namely extraversion, agreeableness, conscientiousness, emotional stability and openness (De Fruyt, McCrae, Szirmak, & Nagy, 2004; John & Srivastava, 1999). A high score on the first dimension, extraversion, reflects an assertive, talkative and energetic personality. The second dimension, agreeableness, measures social skills, co-operation and compassion. A person with high scores on conscientiousness is typically orderly, reliable and responsible (John & Srivastava, 1999). According to the Five Factor Model, the fourth dimension, emotional stability, is the opposite of neuroticism. This dimension measures how well people can deal with stressful events in their lives. The fifth and final dimension, openness, refers to the flexibility of people to deal with new experiences or intellectual challenges (Goldberg, 1990; John, 1990). The Five Factor Model is used to measure maternal personality characteristics in the current research.

Previous research showed that maternal Big Five dimensions are directly related to less internalizing problems in adolescents. Lower maternal emotional stability and extraversion were associated with wariness and other internalizing problems in adolescents (Degnan, Henderson, Fox, & Rubin, 2008; Ormel, Oldehinkel, Ferdinand, Hartman, De Winter, Veenstra, et al., 2005; Van Leeuwen, Mervielde, Braet, & Bosmans, 2004). Adolescents with more conscientious mothers demonstrated lower levels of internalizing problems (Oliver, Guerin, & Coffman, 2009).

Further, a recent meta-analysis found that higher levels of maternal extraversion, agreeableness, conscientiousness, emotional stability and autonomy were related to higher levels of warm parenting (Prinzle, Stams, Deković, Reijntjes, & Belsky, 2009). The strongest correlation was found between maternal agreeableness and warmth. More agreeable mothers are typically kind, good-natured and easy-going parents. It is likely that these mothers have the capacity to provide warmth and protection for their children (Prinzle et al., 2009). However, this meta-analysis is based on univariate relations between the Big Five

characteristics and internalizing problems. These relations do not take shared variance into account. Since the Big Five characteristics are correlated, it is important to account for shared variance between the personality dimensions. For this reason, the current research uses multivariate linear regression analyses.

Moreover, existing studies provide consistent evidence for a link between more maternal warmth and less internalizing behavior problems in adolescents (Barrera, Prelow, Dumka, Gonzales, Knight, Michaels, et al., 2002; Rothbaum & Weisz, 1994). Together, these findings suggest that maternal warmth could possibly be an important factor to take into account when researching the relation between maternal personality characteristics and internalizing problems in adolescents. Thus, although the mediating role of maternal warmth for relations between maternal Big Five personality characteristics and adolescent internalizing symptoms has, to our knowledge, not yet been examined, existing research findings are indicative of this plausible mediating relation.

Research questions and hypotheses

In the current study, the following two main research questions are addressed:

1. Are relations between maternal extraversion, agreeableness, conscientiousness, emotional stability and autonomy, and adolescent anxious problems mediated by maternal warmth?
2. Are relations between maternal extraversion, agreeableness, conscientiousness, emotional stability and autonomy, and adolescent withdrawn problems mediated by maternal warmth?

Based on previous findings the following hypotheses were formulated (see Figure 1):

H1. More maternal extraversion, agreeableness, conscientiousness, emotional stability and autonomy are related to less anxious problems in adolescents between 12 and 15 years old (Ormel et al., 2005; Van Leeuwen et al., 2004).

H2. More maternal extraversion, agreeableness, conscientiousness, emotional stability and autonomy are related to less withdrawn problems in adolescents between 12 and 15 years old (Degnan et al., 2008; Ormel et al., 2005; Van Leeuwen et al., 2004).

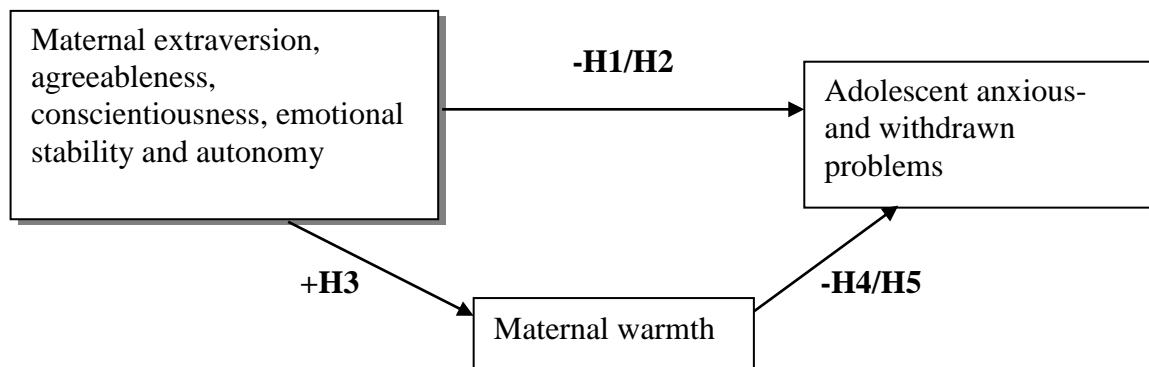
H3. More maternal extraversion, agreeableness, conscientiousness, emotional stability and autonomy are related to more warm parenting (Prinz et al., 2009)

H4. Higher levels of maternal warmth are related to less anxious problems in adolescents (Barrera et al., 2002).

H5. Higher levels of maternal warmth are related to less withdrawn problems in adolescents (Barrera et al., 2002).

Figure 1

Conceptual Model of the Relations between Maternal Big Five Personality, Maternal Warmth and Adolescent Internalizing Problems



Method

Participants and procedure

The hypotheses will be tested through statistical analyses conducted with data from the longitudinal Flemish Study on Parenting, Personality and Development (FSPPD; Prinzie et al., 2003). The FSPPD study commenced in 1999 and contains six measurement waves in 1999, 2000, 2001, 2004, 2007 and 2009. For this article, data on maternal self-rated Big Five features is used from measurement wave three (2001; T1), maternal self-reported warmth is measured during measurement wave four (2004; T2) and adolescent self-reported internalizing problems are measured during wave five (2007; T3).

A proportional stratified sample of elementary-school-aged children attending regular schools was randomly selected. Strata were constructed according to geographical location, gender and age. This was done by alphabetically arranging the names of the children whose birthdays were before the 31st of March, and then selecting the second and the second to last child. Out of 800 families who were invited to take part in the study in 1999, 599 families initially participated (Prinzie et al. 2004).

At T1, the research population consisted of 586 families. At T2, 501 families participated, and at T3, the sample consisted of 466 families. 49.9% percent of adolescents were boys and 50.1% were girls. The percentages of the mothers' educational levels were as follows: elementary school (1.3%), secondary school (42%), college (44.1%) and university (12.5%).

Instruments

Maternal Big Five characteristics. Maternal Big Five personality characteristics were assessed using maternal self-reports on the Five-Factor Personality Inventory (FFPI;

Hendriks, Hofstee, & De Raad, 1999a, 1999b). Each dimension consists of 20 items: Extraversion (*'Love to chat'*), Agreeableness (*'Respect others' feelings'*), Conscientiousness (*'Do things according to a plan'*), Emotional Stability (*'Can take my mind off my problems'*) and Autonomy (*'Want to form my own opinion'*) (Hendriks, Perugini, Angleiter, Ostendorf, De Fruyt, Hřebíčková, et al., 2003; Hendriks, Hofstee, & De Raad, 1999a; 1999b). The items are rated on a five-point scale, ranging from 1 = *not at all applicable* to 5 = *entirely applicable*. Research showed that the FFPI scale scores high on internal consistency and has a high construct validity (Hendriks et al., 1999a; 1999b). Cronbach's alphas in this sample ranged from .85 for Autonomy to .90 for Extraversion and Emotional stability

Internalizing problems. Anxious symptoms were assessed using adolescent self-reports on the subscale Anxiety/Depression of the Youth Self Report (YSR). The Youth Self Report (YSR) is a commonly used instrument to measure internalizing behavior problems in childhood and adolescence. The subscale contains 13 items (*'I feel like nobody loves me'*). In this sample, Cronbach's alpha for this scale is .83.

Withdrawn symptoms were measured using adolescent self-reports on the Withdrawn/Depressed subscale of the Youth Self Report (YSR). The subscale contains eight items (*'There are not that many things that I like'*). In this sample, Cronbach's alpha for this scale is .69. Both YSR-subcales proved to be reliable instruments (Achenbach, 1991b).

Maternal warmth. Mothers reported on their own warm parenting with the Warmth/Involvement subscale of the Parenting Practices Questionnaire (PPQ; Robinson, Mandelco, Olsen, & Hart, 1995). The subscale contains 11 items (*'Expresses affection by hugging, kissing, and holding me'*). The items are rated on a five-point scale ranging from 1 = *never* to 5 = *always*. In this sample, Cronbach's alpha for this scale is .82.

Data analyses

A hypothesis-testing research design was employed to answer the research questions outlined in this study. First, descriptive statistics (Means, Standard Deviations) of, and bivariate intercorrelations between the variables will be examined. Then, to test the extent to which maternal warmth mediates the relations between maternal Big Five personality characteristics and anxious- and withdrawn problems in adolescents, we use Baron and Kenny's procedure (1986). Baron and Kenny's procedure is a frequently used method to test mediation hypotheses. First, two linear regression analyses were performed to test whether the independent variables (maternal extraversion, agreeableness, conscientiousness, emotional stability and autonomy) are related to the dependent variables (anxious and withdrawn symptoms; H1 and H2). Since gender is correlated to anxious problems, it was

used as a control variable. This was done by performing a stepwise regression analysis. Second, a regression analysis was conducted to examine to what extent the independent variables (maternal extraversion, agreeableness, conscientiousness, emotional stability and autonomy) are associated with the mediator (maternal warmth; H3). Third, two regression analyses were conducted to examine the extent to which the mediator (maternal warmth) is related to the dependent variables (anxious- or withdrawn symptoms; H4 and H5).

Results

Descriptive Statistics and Correlation Analyses

Descriptive statistics and bivariate correlations between the variables are reported in Table 1. Results show that higher scores on maternal emotional stability were correlated with less anxious problems as well as less withdrawn problems. Adolescent gender was positively correlated to anxious problems. Because adolescent gender was coded as 0 = boys and 1 = girls, this positive correlation indicates that girls had more anxious problems than boys. Adolescent gender was therefore controlled for in the regression analyses for anxious problems. Higher scores on maternal extraversion, conscientiousness and autonomy were correlated to less withdrawn problems. All Big Five personality traits were correlated to more maternal warmth. Maternal warmth was not correlated to anxious- or withdrawn symptoms. All correlations were small (Rosenthal, 1994).

Mediation of Relations between Personality and Internalizing Problems by Warmth

Table 2 shows results of the regression analyses examining direct relations between maternal personality and adolescent anxious symptoms. Results indicate that adolescents with more emotionally stable mothers reported lower levels of anxious problems. Girls have more anxious problems than boys. The following analyses examined the relation between maternal personality features and withdrawn problems in adolescents. Table 2 also shows that adolescents with extraverted mothers and conscientious mothers showed lower levels of withdrawn problems. Maternal personality characteristics explained 4% of the variance in anxious problems and 5% of the variance in withdrawn problems.

To test whether the theoretically chosen mediator, maternal warmth, should be included in the models, we conducted multivariate analyses for the prediction of maternal warmth from maternal personality (see Table 2). More extraverted mothers and more agreeable mothers showed higher levels of warmth. Maternal personality explained 8% of the variance in maternal warmth. Relations between maternal warmth and anxious- or withdrawn problems were not significant. Maternal personality and maternal warmth explained less than 1% of the variance in anxious- and withdrawn problems.

To summarize, when all personality dimensions were taken into account, adolescents with more emotionally stable mothers reported lower levels of anxious problems (H1) and adolescents with more extraverted and conscientious mothers reported lower levels of withdrawn problems (H2). More maternal extraversion and agreeableness were linked to more maternal warmth (H3). Maternal warmth was, however, not related to anxious- or withdrawn symptoms (H4/H5). Thus, maternal warmth does not mediate the relations between maternal extraversion, agreeableness, conscientiousness, emotional stability and autonomy, and anxious- and withdrawn problems in adolescents

Table 1

Descriptive statistics and correlations

	N	M	SD	1	2	3	4	5	6	7	8	9	10
1. Extraversion	597	76.05	10.48										
2. Agreeableness	597	80.82	9.54	.08									
3. Conscientiousness	597	74.93	10.47	.04	.46**								
4. Emotional stability	597	74.56	10.19	.50**	.24**	.12**							
5. Autonomy	597	68.74	8.99	.43**	.09*	.12**	.53**						
6. Warmth	521	4.24	.43	.19**	.21**	.17**	.11*	.15**					
7. Anxious	467	5.18	4.12	-.08	.03	.03	-.13**	-.04	.05				
8. Withdrawn	470	2.40	2.27	-.19**	.01	-.10*	-.14**	-.12*	-.04	.57**			
9. Age Adolescent	615	39.45	3.66	-.04	.12**	-.04	.01	.02	.00	.06	.07		
10. Gender ^a	615	0.50	-	.04	.06	.09*	.05	.06	.08	.16**	-.03	.02	

* $p \leq .05$. ** $p \leq .01$

^a Gender was coded as 0 = boys; 1 = girls.

Table 2

Prediction of anxious- and withdrawn problems in adolescents and maternal warmth from maternal personality

	Anxious			Withdrawn			Warmth		
	B	SE	ΔR^2	B	SE	ΔR^2	B	SE	ΔR^2
Gender	1.36***	0.38	.02	-	-	-	-	-	-
Personality			.04			.05			.08
Extraversion	-0.01	0.02		-0.03**	0.01		0.01***	0.00	
Agreeableness	0.02	0.02		0.02	0.01		0.01***	0.00	
Conscientious	0.00	0.02		-0.03**	0.01		0.00	0.00	
Emotional stability	-0.06**	0.02		-0.01	0.01		-0.00	0.00	
Autonomy	0.02	0.03		-0.00	0.01		0.01	0.00	

* $p < .05$. ** $p < .01$. *** $p < .001$

Table 3

Prediction of anxious- and withdrawn problems in adolescents from maternal warmth

Predictor	Anxious			Withdrawn		
	B	SE	ΔR^2	B	SE	ΔR^2
Gender	1.27***	0.39	.02	-	-	-
Maternal warmth	0.44	0.47	.02	-0.21	0.25	-.00

* $p < .05$. ** $p < .01$. *** $p < .001$

Discussion

Maternal personality features seem to be linked to several internalizing problems in adolescents. Therefore, it is surprising that not a lot of research has been done on this subject. The current study attempted to make a contribution to the knowledge base. Unlike previous studies, usually based on cross-sectional research designs, the current study searched for prospective multivariate relations. Furthermore, the data used in the current study was obtained by maternal self-reports as well as adolescent self-reports, in contrast to previous studies based on maternal reports only.

The current research found that higher scores on maternal emotional stability are linked to lower levels of anxious problems in adolescents. These findings correspond to previous research outcomes, which found a link between lower levels of maternal emotional stability and more internalizing problems in adolescents (Degnan et al., 2008).

Another relation found in previous studies, the relation between adolescents with more extraverted mothers and less withdrawn problems (Van Leeuwen et al., 2004), was also validated by the current research. In addition to this, the current research also found a link between more conscientious mothers and less withdrawn problems in adolescents. These findings were in accordance with our expectations.

Unlike a previous meta-analysis that found links between all Big Five personality characteristics and maternal warmth (Prinz et al., 2009), the current research only found that maternal extraversion and agreeableness are linked to maternal warmth. The fact that the previous meta-analysis is based on univariate dimensions, and the current research is based on multivariate dimensions, could possibly explain the different outcomes. The meta-analysis found the highest correlation between the dimension of agreeableness and maternal warmth, which corresponds to the current findings.

Previous studies provided consistent evidence for a link between more maternal warmth and less anxious- and withdrawn problems in adolescents (Barrera et al., 2002; Rothbaum & Weisz, 1994). We expected to find a link between these variables as well. However, the current research did not find a significant relation between maternal warmth and either of the internalizing problems in adolescents. It is possible that the current study did not find this relation, because it focuses on adolescents between the age of 12 and 15 years old. Previous research found that the closeness between parents and adolescents wanes in early- and mid-adolescence (Shanahan, McHale, Crouter, & Osgood, 2007). Another possible explanation is the difference in research design between previous studies and the current study. Most of the previous studies employed a cross-sectional design, whereas the current

study searched for prospective multivariate relations.

Limitations and future research

A limitation due to the sample size is the sole reliance on questionnaire measures. This increases the likelihood of inconsistencies in the results of the questionnaire measures. Therefore, a multimethod measurement strategy may be more accurate when assessing parenting and children's behavior problems. Furthermore, we analyzed a population-based sample, and our results should not be extended to clinical populations. Future research should assess whether our results replicate in clinical samples.

Conclusions

When all personality dimensions were taken into account, adolescents with emotionally stable mothers showed lower levels of anxious problems (H1) and adolescents with extraverted and conscientious mothers showed lower levels of withdrawn problems (H2). Maternal extraversion and agreeableness are linked to maternal warmth (H3). The current study did not find a relation between maternal warmth and either of the internalizing problems in adolescents (H4/H5).

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