



Norwegian
Business School

This file was downloaded from BI Open, the institutional repository (open access) at BI Norwegian Business School <https://biopen.bi.no>

It contains the accepted and peer reviewed manuscript to the article cited below. It may contain minor differences from the journal's pdf version.

Cheng, H., & Furnham, A. (2020). Correlates of maternal Emotional Stability: Findings from the Millennium Cohort Study. *Personality and Individual Differences, 164*, 110119.

<https://doi.org/10.1016/j.paid.2020.110119>

Copyright policy of Elsevier, the publisher of this journal.
The author retains the right to post the accepted author manuscript on open web sites operated by author or author's institution for scholarly purposes, with an embargo period of 0-36 months after first view online.

<http://www.elsevier.com/journal-authors/sharing-your-article#>



Correlates of Maternal Emotional Stability: Findings from the Millennium Cohort Study

Helen Cheng¹ and Adrian Furnham²

¹*Department of Psychology, University College London, London WC1E 6BT, UK;* ²*BI: Norwegian Business School, Nydalsveien 37, 0484 Oslo, Norwa*

Corresponding author: adrian@adrianfurnham.com

Abstract

This study explored correlates of maternal Emotional Stability drawing on a longitudinal data, from the Millennium Cohort Study (MCS): a sample of 10,925 mothers. Data were collected when children were born, and at ages 9 months, and then 3 and 7 years. Structural equation modelling showed that a family poverty indicator, maternal psychological distress, parent-child relationship, and children's behavioural problems all had significant and direct effects on maternal trait Emotional Stability (Neuroticism), accounting for 26% of the total variance. The strongest predictor was maternal psychological distress, followed by children's behavioural problems. Further, maternal psychological distress had direct effects on both parent-child relationship and children's behavioural adjustment. The implications and limitations are discussed.

Word Count: 4,435

Key Words: Maternal Emotional Stability; Family Poverty Indicator; Maternal Psychological Distress; Parent-child Relationship; Children's Behavioural Problems; Longitudinal

Introduction

Personality traits are characterized as innate dispositions and tendencies to behave, think, and feel in consistent ways (Kenrick & Funder, 1988). Personality traits are both stable over time (Roberts & W. DeVecchio, 2000; Roberts, Wood, & Caspi, 2008) but also subject to change (Caspi, Roberts, & Shiner, 2005; Furnham & Cheng, 2019; Roberts, Walton & Viechtbauer, 2006).

In a meta-analysis, Roberts and DeVecchio (2000) examined the rank-order consistency of personality traits from childhood to old age from 152 longitudinal studies. They found that trait consistency increased from .31 in childhood to .54 during the college years, to .64 at age 30, and then reached a plateau around .74 between ages 50 and 70 when time interval was held constant at 6.7 years.

In a twin study, Blonigen and colleagues examined stability and change in personality in a sample of 626 complete pairs of monozygotic (MZ) and dizygotic (DZ) male and female twins (Blonigen, Carlson, Hicks, Krueger & Iacono, 2008). They found that facets of Negative Emotionality (NEM) declined substantially at the mean and individual levels, whereas facets of Constraint (CON) increased over time. Furthermore, individuals in late adolescence who were lowest on NEM and highest on CON remained the most stable over time, whereas those exhibiting the inverse profile (higher NEM, lower CON) changed the most in a direction towards growth and maturity. The authors stated that biometric analyses revealed rank-order stability in personality to be largely genetic, with rank-order change mediated by both the non-shared environment (and error) as well as genes (Blonigen, et al., 2008).

In the past two decades, in area of behavioural genetics, Plomin and colleagues established that with personality factors such as Extraversion and Neuroticism, 50% of variance can be explained by genetic influences (Plomin, DeFries, Knopik, & Neiderhiser, 2013).

Correlates of maternal emotional stability

However, it is unclear what other markers and factors influence the development of trait Emotional Stability/Neuroticism in adulthood. This study does that.

Among the Big-Five personality traits, Emotional Stability/Neuroticism has the strongest association with mental and physical health and well-being (Cheng, Green, Wolpert, Deighton, & Furnham, 2014; Cheng, Treglown, Green, Chapman, Kornilaki, & Furnham, 2016). Most studies in the area used trait Emotional Stability as an independent variable (predictor variable), and few studies used it as a dependent variable (criterion variable). In a recent study on early indicators predicting adult trait Neuroticism using a nationally representative sample, Furnham and Cheng (2017) found that gender (females), childhood intelligence and behavioural problems, malaise in early adulthood were significant and independent predictors of adult trait Neuroticism measured at age 50 years, accounting for 14% of the variance. There is an ongoing debate as to what extent Malaise and Neuroticism are the similar constructs or related. In either case it is useful to examine the association between these two assessed six years apart (for stability or correlation). In the current study, we examine whether maternal psychological distress assessed when children were 9 months old is associated with maternal trait emotional stability six years later.

The present study is also able to examine whether child rearing factors, such as mother-child relationship and child behavioural problems are associated with maternal Emotional Stability/Neuroticism over a very sensitive four-year period.

Various studies have demonstrated the links between family socio-economic conditions and health (Marmot, 2004; 2010) and mental health (Brown, & Harris, 1978; Culpin, Stapinski, Miles, Araya, & Joinson, 2015), and between maternal depression and child development (Kiernan, & Huerta, 2008; Petterson, & Albers, 2001) and behavioural problems (Hammen, Burge & Stansbury, 1990; Weintraub, Winters & Neale, 1986).

Correlates of maternal emotional stability

This study examined to what extent a set of psychosocial, behaviour and demographic factors are associated with maternal trait Emotional Stability in the first seven years after childbirth. It has two advantages over previous studies. It was based on a large, prospective sample of over 10,000 families. This study was among the first study to examine child-rearing factors that may affect maternal personality trait Emotional Stability, together with maternal mental health and demographic indicators.

Hypotheses

Based on the literature reviewed above five hypotheses were formulated. (H1) Family poverty (social class) would be significantly and negatively associated with maternal Emotional Stability. This is based on the literature which suggests that emotional stability is rated to work and financial success (Furnham, 2018). H2) Maternal psychological distress (measured 9 months after birth) would be significantly and negatively associated with maternal Emotional Stability seven years after birth, This is based on the extensive literature on the relative stability of personality over time (Furnham & Cheng, 2019). (H3) Parent-child relationship (assessed at age 3) would be significantly and positively associated with maternal Emotional Stability seven years after birth. This based on the literature which looks at the long term consequences of parent-child relationships particularly on the mother (van Loon et al., 2011) (H4) Children's behavioural problems (measured 5 years after birth) would be significantly and negatively associated with maternal Emotional Stability. This is based on the literature on the consequences of emotional stability on close social relationships (Eysenck, 1967) (H5) Family poverty indicator, maternal psychological distress, parent-child relationship, and children's behavioural problems would be significantly and independently associated with the outcome variable.

Method

Sample

The study draws on data collected for the Millennium Cohort Study (MCS), a survey of 18,818 babies born between September 2000 and January 2002 into 18,552 families living in the UK (Dex & Joshi, 2005). The first sweep of the Millennium Cohort Study was carried out during 2001 and 2002 when most babies were 9-months old. Data were collected from the parents of the babies via personal interview and self-completion questionnaire. The sample design allowed for disproportionate representation of families living in areas of child poverty. Due to disproportionate sampling, special weights have to be applied in analyzing the data (Plewis, Calderwood, Hawkes, Hughes, & Joshi, 2004). The families were followed up. The following analyses are based on data from the ages at 9 months, 3 years and 7 years surveys. Data were collected from mothers via personal interview and self-completion questionnaires. In 2008, when cohort members were at age 7 years, 13,857 families took part in the survey and 13,197 (response=95%) mothers completed a questionnaire on their personality trait Emotional Stability. The following analyses are based on 10,925 mothers for whom we have complete data on family poverty indicator, maternal psychological distress, mother-child relationship, children's behavioural problems, and maternal trait Emotional Stability.

Measures

1. *Family poverty indicator.* Family income of the household was reported at birth. The income data were adjusted for the number and ages of the people in the family home using the equivalence scales produced by the Organisation for Economic Co-operation and Development (OECD). Families whose equivalised income was 60% below the UK median, before housing costs, were considered to be in poverty (Ketende & Joshi, 2008). OECD below 60% median poverty indicator 1=Yes, 0=No.

Correlates of maternal emotional stability

2. *Maternal psychological distress* was assessed when cohort members were 9 months old. A shortened 9-item version of the Rutter Malaise Inventory (Rutter, Tizard, & Whitmore, 1970) was used, a self-completion instrument measuring depression, anxiety and psychosomatic illness (Rutter, et al., 1970) and it correlates significantly with previously diagnosed and currently treated depression. Example items: “tired most of time”, “often miserable or depressed”, “often gets in violent rage”. It has shown to be relatively stable over time (Furnham & Cheng, 2015). Cronbach’s alpha was .75.
3. *Parent-child relationship* was assessed when cohort members were at age 3 years using the Pianta scale (Pianta, 1992), comprising 15 items on a 5-point Likert scale (1=Definitely not apply, 5=Definitely apply). Example items: “I share an affectionate, warm relationship with my child”; “dealing with my child drains my energy”. Information was collected at age 3 using mother’s report. Responses were summed, with a high score indicating a better parent-child relationship. Cronbach’s alpha was .77.
4. *Children’s Behavioural Problems* was assessed by mother’s report. Mothers were interviewed when cohort members were at age 5 years. Behavioural problems at age 5 years is measured with the Strength and Difficulties Questionnaire (SDQ). The SDQ is a behavioural screening questionnaire for 3 to 16 years olds (Goodman & Goodman, 2009; R. Goodman, 1997, 2001). It consists of 25 items, assessed via parental report, generating scores for five subscales measuring hyperactivity, emotional symptoms, conduct problems, peer problems and pro-social behaviour. The total difficulties score does not incorporate the prosocial scale, which measures prosocial behaviour (Goodman, 1997). Example items: “is restless, overactive, cannot stay still”, “has many fears, is easily scared”, “fights with or bullies other children”, “generally liked by other

Correlates of maternal emotional stability

children” (revers-coded). The 20-item SDQ total score was used in the following analyses. Cronbach’s alpha for the SDQ total score was .73.

5. *Maternal Emotional Stability* was assessed when cohort members were 7 years after the birth using the International Personality Item Pool (IPIP) (Goldberg, 1999), a self-completion questionnaire. Responses (5-point, from “Strongly Agree” to “Strongly Disagree”). The measure was comprised of 8 items. Example items: “I get stressed out easily”, “I take offence easily”, “I get overwhelmed by emotions”. Cronbach’s alpha was 0.68.

Statistical Analyses

First, we look at the associations between the measures used in the study using IBM SPSS Statistics 24. Second, we will conduct structural equation modelling (SEM) to examine the paths linking family poverty at childbirth, maternal psychological distress when children were 9 months old, parent-child relationship measured when children were at age 3, children’s behavioural problems measured when children were at age 5, and maternal Emotional Stability measured when children were at age 7 years using IBM SPSS Amos 24. The main rationale of the SEM design is to follow the time sequence of the variables when they were assessed.

Results

Correlational Analysis

Table 1 shows the correlations and the means and SDs of all variables in the study. Maternal trait emotional stability was significantly and positively associated with parent-child relationship, and significantly and negatively associated with maternal psychological distress and children’s behavioural problems ($p < .001$). Thus hypotheses (H1) to (H4) were supported.

Correlates of maternal emotional stability

Maternal age at childbirth was significantly and positive associated with parent-relationship and negatively associated with family poverty indicator, maternal psychological distress, and children's behavioural problems.

Inset Table 1 about here

Structural Equation Modelling

Structural Equation Modelling (SEM) was used to examine the paths linking family poverty indicator, maternal depress, parent-child relationships, and maternal personality traits extroversion and emotional stability. Paths in the model is designed to correspond with the time sequence in which the variables occurred. The SEM model testing was carried out using the structural equation modelling program IBM SPSS AMOS 24 (Arbuckle, 2016) using maximum likelihood estimation that can be based on incomplete data, known as the full information maximum likelihood (FIML) approach (Arbuckle, 1996).

Figure 1 shows the standardised path coefficients of the structural equation model. The error variance for each observable and latent variables are included in the model (not shown in the diagrams).

Model Fit

The χ^2 statistic is overly sensitive when sample sizes are large or the observed variables are non-normally distributed. The root mean square error of approximation (RMSEA) gives a measure of the discrepancy in fit per degrees of freedom (<.05 indicates a good fit). The final index of choices are the Comparative Fit Index (CFI), and the Tucker Lewis Index (or Non-normed Fit Index) where values above .95 indicate a very good fit, and values >.90 are interpreted as good (Bentler, 1990).

Insert Figures 1 about here

Table 2 shows unstandardized estimate, standard error, and standardised estimate of each indicator of the latent variable and the predictors of the outcome variable for the complete SEM model. The solid lines indicate that the corresponding path coefficients are statistically significant and dashed lines indicate that the path coefficients are non-significant. For the latent variable of maternal emotional stability, the loading ranged from .34 to .70, indicating the reasonable coherence of the underlying construct for the latent variable.

Insert Table 2 about here

The model showed a good fit. Chi-square was 683.7 ($df = 41, p < .001$), the CFI was .979, the TLI was .954, and the RMSEA was .037. The model explains 26 per cent of the total variance of maternal emotional stability. Figure 1 shows that the family poverty indicator, maternal psychological distress, parent-child relationship, and children's behavioural all had significant and direct effects on problems maternal personality traits extraversion and emotional stability. Thus, (H5) was supported. The strongest predictor of maternal emotional stability was maternal psychological distress measured six years earlier, followed by children's behavioural problems.

Figure 1 also shows that family poverty was a significant and positive predictor of maternal psychological distress and children's behavioural problems, and a significant and negative predictor of parent-child relationship and maternal emotional stability.

Discussion

Correlates of maternal emotional stability

This study examined a set of psychological, behaviour, and demographic factors that may affect maternal personality trait emotional stability, drawing on a large nationally representatively longitudinal data in the UK. The results of the current study showed that a family poverty indicator, maternal psychological distress, mother-child relationship, and children's behavioural problems were all significant and independent predictors of maternal emotional stability measured when their children were at age seven years.

The results of this study confirmed and extended the findings in the area. First, SEM model in Figure 1 shows that family poverty has a significant and positive effect on maternal psychological distress, Mothers who had family economic deprivation were more likely to suffer from psychological distress. This is in line with the previous findings that poverty is linked with mental health (Brown, & Harris, 1978; Culpin, Stapinski, Miles, Araya, & Joinson, 2015). Family poverty also has the direct and negative effects on mother-child relation, and children's behavioural problems. Clearly mothers from a less well-off background have much less access to facilities and possibly paid help which increases their stress.

Second, maternal psychological distress in turn, has a direct and negative effect on mother-child relationship quality, and a significant and positive effects on children's behavioural problems as found in previous studies (Hammen, Burge & Stansbury, 1990; Weintraub, Winters & Neale, 1986). Distressed mothers tend to show a less cooperative and more insensitive parenting style (Pianta & Egeland, 1990), which may worsen children's behavioural problems.

Third, parental rearing experience (mother-child relationship, children's behavioural problems) has significant and direct effects on maternal Emotional Stability. Good mother-child relationship may enhance maternal emotional stability; and children's behavioural problems may increase maternal Emotional Instability. These two factors which are highly related are the most powerful predictors of the mothers' Neuroticism 7 years after birth

Correlates of maternal emotional stability

Among all variables examined in the study, the strongest predictor of maternal Emotional Stability is maternal Psychological Distress measured six years earlier. With a correlation $r=.36$ ($p<.001$) between these two measures, results suggest some underlying biological/genetic mechanism. Thus, it is quite possible that Neurotic children have, by definition, more problematic relationships and more behavioural problems which adds considerably to the burden of Neurotic mothers. It is also likely that mothers who suffered postnatal depression (showing higher scores on psychological distress when children were 9 months old) become more neurotic with negative affect in dealing with children's misbehaviours thus increase children's behavioural problems.

The findings of the current study shows that personality trait such as Emotional Stability might be influenced by child rearing experience, as well as family economic conditions and maternal mental health. Although this was a longitudinal study it is possible to argue that the initial emotional stability of the mother at birth had an impact on the various variables considered. Thus, more neurotic mothers experienced more malaise, had a less happy relationship with their child, which in turn expressed more behavioural problems. This in turn may have exaggerated their Neuroticism characterised by anxiety, depression and moodiness. Hence the concept of a vicious cycle.

Limitations

Like all studies, this study had limitations. As with all research using cohort studies, the variables used in the study is constrained by the availability of the data. Ideally, we would have had a "before-and-after" identical measure of emotional stability: that is before birth and then six years later to determine outcomes. We have inferred that our predictor variables "affect" Emotional Stability (rather than vice versa), and therefore should have measured Emotional Stability of mothers when children were born and then control for the initial Emotional Stability

Correlates of maternal emotional stability

levels when using the present set of predictors to predict Emotional Stability seven years later. The data set did not have this data and therefore we could not be sure if the predictors would be significant if initial levels of Emotional Stability were controlled.

Another limitation is the attrition of respondents over time. Since sample attrition is greatest amongst individuals in more deprived circumstances, our results may thus be a conservative estimate of the long-term influence of social inequalities experienced during early childhood. Another limitation is that all measures were by mother-report with concomitant problems of method invariance. Furthermore, even though we used the technique of SEM in the study, the independent variables may not be the “predictors” of, but rather, the “correlates” of the outcome variable. For one can indeed argue that the criterion variable may also predict some of the independent variables e.g. child-parent relationship and children’s if data were available on the initial maternal Emotional stability at childbirth. Thus, findings of the current study are not conclusive, which should be verified by future research.

References

- Arbuckle, J. L. (1996). Full information estimation in the presence of incomplete data. In G. A. Marcoulides & R. E. Schumacker (Eds.). *Advanced structural equation modeling* (pp. 243–277). Mahwah, NJ: Lawrence Erlbaum Associates, Inc.
- Arbuckle, J. L. (2016). *IBM SPSS Amos 24 User’s Guide*. Amos Development Corporation.
- Argyle, M (2001) *The psychology of happiness (2nd ed.)*. London: Routledge.
- Bentler, P. M. (1990). Comparative fit indexes in structural models. *Psychological Bulletin*, *107*, 238–246.

Correlates of maternal emotional stability

- Caspi, A., Roberts, B. W., & Shiner, R. L. (2005). Personality development: Stability and Change. *Annual Review of Psychology, 56*, 453-484.
- Cheng, H., Green, A., Wolpert, M., Deighton, J., & Furnham, A. (2014). Factors influencing adult quality of life: Findings from a nationally representative sample in the UK. *Personality and Individual Differences, 68*, 241-246.
- Cheng, H., Treglown, L., Green, A., Chapman, B., Kornilaki, K., & Furnham, A. (2016). Childhood onset of migraine, gender, parental social class, and trait neuroticism as predictors of the prevalence of migraine in adulthood. *Journal of Psychosomatic Research, 88*, 54-58.
- Coplan, R. J., Reichel, M., & Rowan, K. (2009). Exploring the associations between maternal personality, child temperament, and parenting: A focus on emotions. *Personality and Individual Differences, 46*(2), 241-246.
- Culpin, I., Stapinski, L., Miles, O., Araya, R., & Joinson, C. (2015). Exposure to socioeconomic adversity in early life and risk of depression at 18 years. *Journal of Affective Disorders, 183*, 269-278.
- Beck, A. T. (1979). *Cognitive Therapy and the Emotional Disorders*. New York: Penguin Books, NY, USA.
- Belle, D. (1990). Poverty and women's mental health. *American psychologist, 45*(3), 385-389.
- Brody, G. H., & Flor, D. L. (1997). Maternal psychological functioning, family processes, and child adjustment in rural, single-parent, African American families. *Developmental Psychology, 33*(6), 1000-1011.
- Brown, G. W., & Harris, T. (1978). *Social origins of depression*. London: Tavistock.
- Costa, P. T., & McCrae, R. R. (1997). Longitudinal stability of adult personality. In R. Hogan, J. Johnson, & S. Briggs (Eds.), *Handbook of personality psychology* (pp. 269–292). San Diego: Academic Press.

Correlates of maternal emotional stability

Cummings, E. M. & Davies, P. T. (1994). Maternal depression and child development.

Journal of Child Psychology and Psychiatry, 35(1), 73-122.

Dex, S., & Joshi, H. (2005). *Children of the 21st century. From birth to nine months*. Bristol:

Policy Press.

Eysenck, H. J. (1967). *The biological basis of personality*. London: Springfield, III: Charles

C. Thomas

Furnham, A. (2018). Personality and Occupational Success. In Virgil Zeigler-Hill & Todd K.

Shackelford (Eds), *The SAGE Handbook of Personality and Individual Differences*

(pp. 537-551). New York: Sage.

Furnham, A. & Cheng, H. (2015). The stability and change of malaise scores over 27 years:

Findings from a nationally representative sample. *Personality and Individual Differences*, 79, 30-34.

Furnham, A., & Cheng, H. (2017). Factors affecting adult trait Neuroticism in a nationally

representative sample. *Psychiatry Research*, 256, 253-257.

Furnham, A., & Cheng, H. (2019). The change and stability of NEO scores over six-years: A

British study and a short review. *Personality and Individual Differences*, 144, 105-110.

Gershoff, E. T., Aber, J. L., Raver, C. C., & Lennon, M. C. (2007). Income is not enough:

Incorporating material hardship into models of income associations with parenting and child development. *Child Development*, 78(1), 70-95.

Goldberg, L. R. (1999). A broad-bandwidth, public domain, personality inventory measuring

the lower level facets of several five-factor models. In I. Mervielde, I. Deary, F. De

Fruyt, & F. Ostendorf (Eds.), *Personality Psychology in Europe*, Vol. 7 (pp. 7-28).

Tilburg, The Netherlands: Tilburg University Press.

Correlates of maternal emotional stability

- Goodman, A., & Goodman, R. (2009). Strengths and Difficulties Questionnaire as Dimensional Measure of Child Mental Health. *Journal of the American Academy of Child and Adolescent Psychiatry, 48*(4), 400-403.
- Goodman, R. (1997). The strengths and difficulties questionnaire: a research note. *Journal of Child Psychology and Psychiatry, 38*, 581-586.
- Goodman, R. (2001). Psychometric properties of the strengths and difficulties questionnaire (SDQ). *Journal of the American Academy of Child & Adolescent Psychiatry, 40*, 1337-1345.
- Ketende, S. and Joshi, H. 2008. "Income and poverty". In Millennium Cohort Study, third survey: a user's guide to initial findings, Edited by: Hansen, K. and Joshi, H. London: Centre for Longitudinal Studies, Institute of Education.
- Hammen, C , Burge, D. & Stansbury, K. (1990). Relationship of mother and child variables to child outcomes in a high-risk sample: a causal modeling analysis. *Developmental Psychology, 26*, 24-30.
- Hansen, K., & Joshi, H. (Eds.). (2008). *Millennium Cohort Study Third Survey: A User's Guide to Initial Findings* London: Institute of Education, Centre for Longitudinal Studies.
- Kiernan, K. E., & Huerta, M. C. (2008). Economic deprivation, maternal depression, parenting and children's cognitive and emotional development in early childhood. *British Journal of Sociology, 59*(4), 783-806.
- Kenrick, D. T., & Funder, D. C. (1988). Profiting from controversy: Lessons from the person-situation debate. *American Psychologist, 43* (1), 23-34.
- Marmot, M. (2007). Achieving health equity: From root causes to fair outcomes. *Lancet, 370*, 1153-1163.
- Marmot, M. (2010). *Fair Society Healthy Lives. The Marmot Review: Strategic Review of*

Correlates of maternal emotional stability

Health Inequalities in England post 2010.

<http://www.ucl.ac.uk/ghcg/marmotreview/FairSocietyHealthyLives>.

- Petterson, S. M., & Albers, A. B. (2001). Effects of poverty and maternal depression on early child development. *Child Development, 72*, 1794-1813.
- Pianta, R. C. 1992. Parent-child relationship scale. Richmond, VA, University of Virginia.
- Pianta, R. C. & Egeland, B. (1990). Life stress and parenting outcomes in a disadvantaged sample: results of the mother-child interaction project. *Journal of Clinical Child Psychology, 19*, 329-336
- Plewis, I., Calderwood, L., Hawkes, D., Hughes, H., & Joshi, H. (2004). *Millennium Cohort Study. Technical report on sampling*. London: Institute of Education, Centre for Longitudinal Studies.
- Plomin, R., DeFries, J. C., Knopik, V. S., & Neiderhiser, J. M. (2013). Behavioral genetics (6th Ed.). New York: Worth Publishers.
- Roberts, B. W., & DelVecchio, W. F. (2000). The rank-order consistency of personality traits from childhood to old age: A quantitative review of longitudinal studies. *Psychological Bulletin, 126*(1), 3-25.
- Roberts, B. W., Walton, K. E., & Viechtbauer, W. (2006). Patterns of mean-level change in personality traits across the life-course: A meta-analysis of longitudinal studies. *Psychological Bulletin, 132*, 1-25.
- Roberts, B. W., Wood, D., & Caspi, A. (2008). The development of personality traits in adulthood. In O. P. John, R. W. Robins, & L. A. Pervin (Eds.), *Handbook of personality: Theory and research* (3rd ed., pp. 375-398). New York: The Guilford Press.
- Rutter, M., Tizard, J., & Whitmore, K. (1970). *Education, health and behaviour*. London: Longmans.

Correlates of maternal emotional stability

Rutter, M. & Quinton, D. (1984). Parental psychiatric disorder: effects on children.

Psychological Medicine, 14, 853-880.

Van Loon, L. M., Granic, I., & Engels, R. C. (2011). The role of maternal depression on treatment outcome for children with externalizing behavior problems. *Journal of Psychopathology and Behavioral Assessment*, 33(2), 178-186.

Table 1. Pearson product-moment correlations of maternal emotional stability and other variables in the study.

<i>Variables</i>	Mean (SD)	1	2	3	4	5	6
1. Maternal Emotional Stability at child age 7ys $\alpha=.69$.	25.55 (3.26)	–					
2. Maternal age at childbirth	36.5 (5.83)	.06***	–				
3. Family poverty indicator at childbirth	.30 (.46)	-.05***	-.32***	–			
4. Maternal psychological distress at 9 months $\alpha=.75$.	1.66 (1.74)	-.36***	-.08***	.14***	–		
5. Parent-child relationship at child age 3ys $\alpha=.77$.	64.62 (6.78)	.28***	.13***	-.14***	-.27***	–	
6. Children's behaviour at child age 5ys $\alpha=.73$.	7.10 (4.86)	-.29***	-.19***	.23***	.26***	-.45***	–

Note: Variables were scored such that a higher score indicated mothers being more emotionally stable, the higher mother's age at child birth, a higher score on family poverty indicator, higher scores on maternal psychological distress, higher scores on positive parent-child relationship, and higher scores on children's behavioural problems.

*** $p < .001$.

Table 2. Unstandardized estimate, standard error and standardised estimate of the latent and observable variables of SEM that predict maternal emotional stability.

<i>Variables</i>	Unstandardized estimate	Standard error	Standardised estimate
<i>Maternal emotional stability indicators</i>			
Getting stressed out easily (-)	1.000		.343
Getting angry easily (-)	.701	.013***	.600
Bottling up feelings (-)	.706	.018***	.701
Feeling threatened easily (-)	.673	.014***	.338
Getting overwhelmed by emotions (-)	.924	.017***	.461
Taking offence easily (-)	.756	.017***	.595
Getting caught up in problems (-)	.975	.016***	.524
Grumbling about things (-)			
<i>Predicting maternal emotional stability</i>			
Maternal age	-.001	.001	-.008
Family poverty indicator	-.051	.017*	-.033
Maternal psychological distress	-.142	.005***	-.325
Parent-child relationship	.018	.001***	.164
Children's behavioural problems	-.028	.002***	-.180

Note: (-) = item reversed. * $p < .05$; *** $p < .001$.

Correlates of maternal emotional stability

Figure 1. Predicting maternal emotional stability path model.

