# Maternal Temperament and Daily Mood: A Comparison in Four Cultures

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Caroline Mavridis[1], Jong-Hay Rha[2], Blanca Huitron[3], Ughetta Moscardino[4], Sara Harkness[1] & Charles M. Super[1]

[1]University of Connecticut, Storrs, USA; [2]Hannam University, Korea; [3]University of Seville, Spain; [4]University of Padua, Italy

# Maternal Temperament and Well-Being

- Few studies have examined the role of mothers' own temperament characteristics in their emotional experience.
- For Euro-American mothers, higher Effortful Control is related to lower stress in various aspects of the parental role, while Positive Emotionality is related to less stress in terms of isolation (Oddi, Murdock, Vadnais, Bridgett, & Gartstein, 2013).

# The Present Study

- Across four cultural groups, we propose to examine the relationships between temperament and both positive and negative aspects of mothers' emotional experience at two times postpartum.

# The Present Study (cont.)

- The data are drawn from a larger research project entitled, "The Socialization of Infants' State, Attention, and Affect"[1]
- This analysis involves mothers from Italy (n=47), Korea (n=21), Spain (n=27) and the United States (n=41), at 2 and 6 months postpartum.

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# Sample characteristics upon enrollment (mean & range, or percent)

| | Italy | Korea | Spain | US | F(df 4,79) or chi-sq | *p* |
|---|---|---|---|---|---|---|
| Mother's age | 31.5 (22-39) | 29.7 (23-37) | 31.9 (24-42) | 31.3 (22-37) | 11.80 | <.0001 |
| Years education | 12.9 (8-18) | 15.7 (12-18) | 15.6 (12-17) | 17.5 (13-24) | 2.08 | .11 |
| % First child | 70% | 43% | 50% | 65% | 4.07 | ns |
| % Target child male | 50% | 61% | 50% | 55% | .71 | ns |
| % Mothers employed | 15% | 13% | 5% | 80% | 46.17 | <.0001 |
| Hours worked per week (if employed) | 36.3 (17-50) | 30.0 (10-50) | 24.4 (10-40) | 21.3 (6-52) | .5 | ns |

# The Italian Sample

- Families lived in or near Padua (in the northeast), a mid-size city. Most lived outside the town center in condominiums or separate houses. In general, public spaces were within walking distance. Extended family usually lived nearby and part of families' day-to-day lives. Each parent can take a 10- to 11-month, partially-paid leave at any time until the child's 8th year (or can use that time to shorten their workdays in the 1st year).

# The Korean Sample

- Korean families were from 2 large metropolitan cities, Daejeon and Incheon. They usually lived in complexes of large apartment buildings. During this study, many were living with grandparents, as care of babies and mothers by grandmothers is very common. Working mothers get 90 days of paid maternity leave, taken before or after the birth.

# The Spanish Sample

- These families lived in Seville, a mid-size city, typically in large apartment buildings. Most had extended family living nearby with at least weekly visits. Families had easy walking access to public places (i.e. taking along the baby) combined with pleasant weather. Employed mothers receive 4 months of paid leave that could be used by the fathers.

# The US Sample

- Families lived in suburbs and small towns in central and eastern Connecticut. They lived in separate houses with small yards. The housing pattern is rather dispersed, and homes are rarely within walking distance to public places. Proximity to extended family varied. Paid maternity or paternity leave is rare, so most had returned to work, at least part-time, by the baby's 2nd month (from Harkness et al., 2007).

# Recruitment & Procedures

- Mothers were recruited by researchers at various events (e.g. prenatal classes), and through flyers and mothers' own social networks.
- All measures were administered at home.

# Measures: Maternal Mood

AT THE END OF THE DAY, please fill in the questionnaire below. It is a list of words that describe feelings people have at various times. Please read each one carefully, then circle the number under the answer to the to the right of the word that best describes *how **you** have been feeling today*.

| | not at all | a little | moderately | quite a bit | extremely |
|---|---|---|---|---|---|
| Irritable | 0 | 1 | 2 | 3 | 4 |
| Loving | 0 | 1 | 2 | 3 | 4 |
| Lively | 0 | 1 | 2 | 3 | 4 |
| Forgetful | 0 | 1 | 2 | 3 | 4 |
| Lonely | 0 | 1 | 2 | 3 | 4 |
| Serene | 0 | 1 | 2 | 3 | 4 |
| Helpless | 0 | 1 | 2 | 3 | 4 |
| Curious | 0 | 1 | 2 | 3 | 4 |
| Distractible | 0 | 1 | 2 | 3 | 4 |
| Anxious | 0 | 1 | 2 | 3 | 4 |
| Open | 0 | 1 | 2 | 3 | 4 |
| Tired | 0 | 1 | 2 | 3 | 4 |
| Focused | 0 | 1 | 2 | 3 | 4 |
| Loved | 0 | 1 | 2 | 3 | 4 |
| Discouraged | 0 | 1 | 2 | 3 | 4 |

| | not at all | a little | moderately | quite a bit | extremely |
|---|---|---|---|---|---|
| Relaxed | 0 | 1 | 2 | 3 | 4 |
| Annoyed | 0 | 1 | 2 | 3 | 4 |
| Calm | 0 | 1 | 2 | 3 | 4 |
| Isolated | 0 | 1 | 2 | 3 | 4 |
| Restless | 0 | 1 | 2 | 3 | 4 |
| Clear-headed | 0 | 1 | 2 | 3 | 4 |
| Secure | 0 | 1 | 2 | 3 | 4 |
| Afraid | 0 | 1 | 2 | 3 | 4 |
| Optimistic | 0 | 1 | 2 | 3 | 4 |
| Sad | 0 | 1 | 2 | 3 | 4 |
| Vigorous | 0 | 1 | 2 | 3 | 4 |
| Angry | 0 | 1 | 2 | 3 | 4 |
| Confident | 0 | 1 | 2 | 3 | 4 |
| Bored | 0 | 1 | 2 | 3 | 4 |
| Cheerful | 0 | 1 | 2 | 3 | 4 |

(Based on the Profile of Mood States by Mc Nair, Lorr, & Droppleman, 1971)

# Measures: Maternal Temperament

- Rothbart's Adult Temperament Questionnaire (Short Form), Version 1.3, was administered at 6 months postpartum.
  - 77 items, with 4 main factor scales:
    - NEGATIVE AFFECT (fear, sadness, discomfort, & frustration)
    - EXTRAVERSION/SURGENCY (sociability, positive affect, & high-intensity pleasure)
    - EFFORTFUL CONTROL (attentional control, inhibitory control, & activation control)
    - ORIENTING/SENSITIVITY (neutral perceptual sensitivity, affective perceptual sensitivity, & associative sensitivity)

    - 1="extremely untrue of you"→7="extremely true of you"

# Data Preparation of Mood Scores

- A factor analysis was performed on the pooled samples, at each time point (2 and 6 months).
- Individual scores were derived from a Varimax rotation of the first four factors (preserving 55% of the total variance).

# Mood Factors from Daily Diaries

| 2 months | | | 6 months | | |
|---|---|---|---|---|---|
| **NEG MOOD** | **POS MOOD** | **DISTRACTED** | **NEG MOOD** | **POS MOOD** | **DISTRACTED** |
| irritable | loving | forgetful | irritable | loving | forgetful |
| lonely | lively | distracted | lonely | lively | distracted |
| helpless | serene | | helpless | curious | tired |
| tired | curious | | anxious | open | |
| annoyed | open | **ANXIOUS** | annoyed | focused | **CALM** |
| isolated | focused | anxious | isolated | loved | relaxed |
| sad | loved | restless | restless | clearheaded | calm |
| angry | relaxed | afraid | afraid | secure | |
| bored | calm | | sad | optimistic | |
| discouraged | clearheaded | | angry | vigorous | |
| | secure | | bored | confident | |
| | optimistic | | discouraged | cheerful | |
| | vigorous | | | serene | |
| | confident | | | | |
| | cheerful | | | | |

# Means of Mood Factor Ratings at 2 & 6 Months

| 2 MONTHS | NEG MOOD**** | POS MOOD*** | DISTRACTED | ANXIOUS+ |
|---|---|---|---|---|
| IT (n=52) | .67 | 2.07 | .81 | .53 |
| KO (n=26) | 1.19 | 2.30 | 1.06 | .81 |
| SP (n=28) | .57 | 2.54 | .80 | .77 |
| US (n=43) | .68 | 2.18 | 1.00 | .56 |

| 6 MONTHS | NEG MOOD**** | POS MOOD**** | DISTRACTED+ | CALM** |
|---|---|---|---|---|
| IT (n=46) | .49 | 2.02 | 1.35 | 1.56 |
| KO (n=16) | 1.11 | 2.05 | 1.84 | 2.22 |
| SP (n=26) | .60 | 2.63 | 1.58 | 1.96 |
| US (n=42) | .64 | 2.23 | 1.54 | 1.78 |

+p≤.10 *p≤.05 **p≤.01 ***p≤.001 ****p≤.0001

# Mean Scores on the ATQ-SF
## (done at 6 months postpartum)

| | Negative Affect | Extraversion-Surgency** | Effortful Control+ | Orienting-Sensitivity*** |
|---|---|---|---|---|
| Italy (n=47) | 4.24 | 4.51 | 4.39 | 5.41 |
| Korea (n=21) | 3.97 | 4.25 | 4.16 | 4.60 |
| Spain (n=27) | 3.99 | 4.86 | 4.45 | 5.61 |
| US (n=41) | 4.12 | 4.64 | 4.59 | 5.23 |

+p≤.10 *p≤.05 **p≤.01 ***p≤.001 ****p≤.0001

# Correlational Analyses

- We will be reporting correlations of .20 or greater, which are marginally significant in our largest samples, but not in the smaller ones.
- This is an exploratory procedure to help see patterns, but has the obvious risk of attending to untrustworthy correlations.

**Associations Between Mothers' Temperament Dimensions & Mood Factor Ratings at 2 Months**

| | |
|---|---|
| Italy (n=52) | **NEGATIVE-AFFECT/NEGATIVE-MOOD .26+**<br>**NEGATIVE-AFFECT/not POSITIVE-MOOD -.26+**<br>**NEGATIVE-AFFECT/ANXIOUS-MOOD .30***<br>EXTRAVERSION-SURGENCY/not NEGATIVE-MOOD -.23<br>**EFFORTFUL-CONTROL/not NEGATIVE-MOOD -.25+**<br>EFFORTFUL-CONTROL/not ANXIOUS-MOOD -.22<br>ORIENTING-SENSITIVITY/not NEGATIVE-MOOD -.23<br>**ORIENTING-SENSITIVITY/POSITIVE-MOOD .36***<br>ORIENTING-SENSITIVITY/DISTRACTED-MOOD .22<br>**ORIENTING-SENSITIVITY/not ANXIOUS-MOOD -.31*** |
| Korea (n=26) | NEGATIVE-AFFECT/not POSITIVE-MOOD -.24<br>NEGATIVE-AFFECT/DISTRACTED-MOOD .23<br>EXTRAVERSION-SURGENCY/NEGATIVE-MOOD .24<br>**EXTRAVERSION-SURGENCY/DISTRACTED-MOOD .38+**<br>EXTRAVERSION-SURGENCY/ANXIOUS-MOOD .29<br>ORIENTING-SENSITIVITY/DISTRACTED-MOOD .23 |
| Spain (n=28) | NEGATIVE-AFFECT/not NEGATIVE-MOOD -.21<br>NEGATIVE-AFFECT/not DISTRACTED-MOOD -.27<br>**NEGATIVE-AFFECT/ANXIOUS-MOOD .34+**<br>EXTRAVERSION-SURGENCY/POSITIVE-MOOD .24<br>ORIENTING-SENSITIVITY/POSITIVE-MOOD .28<br>**ORIENTING-SENSITIVITY/not ANXIOUS-MOOD -.35+** |
| US (n=43) | **NEGATIVE-AFFECT/NEGATIVE-MOOD .44****<br>NEGATIVE-AFFECT/not POSITIVE-MOOD -.26<br>**NEGATIVE-AFFECT/ANXIOUS-MOOD .34***<br>EXTRAVERSION-SURGENCY/POSITIVE-MOOD .32+<br>**EFFORTFUL-CONTROL/not NEGATIVE-MOOD -.43****<br>EFFORTFUL-CONTROL/not ANXIOUS-MOOD -.26<br>**ORIENTING-SENSITIVITY/NEGATIVE-MOOD .44****<br>**ORIENTING-SENSITIVITY/DISTRACTED-MOOD .39***<br>**ORIENTING-SENSITIVITY/ANXIOUS-MOOD .36*** |

**+p≤.10 *p≤.05 **p≤.01 ***p≤.001 ****p≤.0001**

**Associations Between Mothers' Temperament Dimensions & Mood Factor Ratings at 6 Months**

| | |
|---|---|
| Italy<br>(n= 46) | ORIENTING-SENSITIVITY/not NEGATIVE-MOOD -.22<br>ORIENTING-SENSITIVITY/POSITIVE-MOOD .23 |
| Korea<br>(n=16) | EXTRAVERSION-SURGENCY/POSITIVE-MOOD .40<br>**EXTRAVERSION-SURGENCY/CALM-MOOD .62****<br>EXTRAVERSION-SURGENCY/not NEGATIVE-MOOD -.33<br>EFFORTFUL-CONTROL/POSITIVE-MOOD .34<br>**EFFORTFUL-CONTROL/CALM-MOOD .43+**<br>ORIENTING-SENSITIVITY/not NEGATIVE-MOOD -.27 |
| Spain<br>(n=26) | **NEGATIVE-AFFECT/NEGATIVE-MOOD .41***<br>**NEGATIVE-AFFECT/not CALM-MOOD -.50****<br>EXTRAVERSION-SURGENCY/POSITIVE-MOOD .36+<br>EXTRAVERSION-SURGENCY/CALM-MOOD .25<br>ORIENTING-SENSITIVITY/not NEGATIVE-MOOD -.24<br>**ORIENTING-SENSITIVITY/POSITIVE-MOOD .37+**<br>ORIENTING-SENSITIVITY/CALM-MOOD .22 |
| US<br>(n=42) | **NEGATIVE-AFFECT/NEGATIVE-MOOD .32***<br>NEGATIVE-AFFECT/not POSITIVE-MOOD -.21<br>**EXTRAVERSION-SURGENCY/POSITIVE-MOOD .28+**<br>**EXTRAVERSION-SURGENCY/CALM-MOOD .32***<br>EFFORTFUL-CONTROL/not NEGATIVE-MOOD -.22<br>EFFORTFUL-CONTROL/not DISTRACTED-MOOD -.25<br>**ORIENTING-SENSITIVITY/NEGATIVE-MOOD .32***<br>ORIENTING-SENSITIVITY/DISTRACTED-MOOD .24 |

**+p≤.10 *p≤.05 **p≤.01 ***p≤.001 ****p≤.0001**

# Summary by Temperament

- **Negative Affect** is associated with negatively-valenced moods;
- **Extraversion-Surgency** is associated with positively-valenced moods (except Korea);
- **Effortful Control** is associated with positively-valenced moods; and
- **Orienting-Sensitivity** is related to positively-valenced moods (except the US).

# Summary by Sample

- In **Italy**, the most correlations occur at two months (by six months, only Orienting-Sensitivity).
- In **Korea**, correlations occur about evenly at the two times, with one change in direction (Extraversion-Surgency is associated with negative mood at 2 months, and positive ones at 6 months).
- In **Spain**, correlations also occur evenly over the two times, and are stable (do not change direction).
- In **the US**, correlations are also quite even and stable over the two times; only site where Orienting-Sensitivity is related to negative (not positive) mood.

# Conclusions

- There are similarities across the four cultures in associations of temperament and mood (NA, EC).
- There are also exceptions that reflect the distinct aspects of the sites (e.g. physical and social settings, customs, beliefs, social policies).
- In terms of application, knowing mothers' temperament-related tendencies toward positive or negative emotional experiences can aid in the assessment of risk in the postpartum. It can also inform targeted interventions geared toward promoting "self-care."

# Ideas for Ongoing Research

- Examine the degree of fit between mothers' and babies' temperament scores, and its relation to mood;
- Explore which aspects of infant temperament are associated with particular moods across cultures.