An Initial Exploration of Children's Executive Functioning and Maternal Emotion Regulation Skills

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Introduction

- Executive functioning (EF) refers to skills involved in planning and problem solving.
  - "Cool" EF skills include planning, inhibition, flexibility, working memory, and self-monitoring that do not involve emotion regulation (Miyake et al., 2000).
  - "Hot" EF skills refer to cognitive processes that include emotion, motivation, and delaying gratification (Miyake et al., 2000)
- Some studies have suggested that EF skills are more important for success in kindergarten than purely "academic" skills (Heaviside & Farris, 1993).
- Although past studies have established a relationship between maternal EF and child EF, these associations have been limited to "cool" EF skills.
- The purpose of this study is to examine if maternal emotion regulation is significantly associated with children's "cool" and "hot" EF skills.

Hypothesis:

- After controlling for covariates (maternal age and education level and child age), mothers' self-reported emotion regulation skills will be positively associated with their child's (a) "cool" EF skills and (b) "hot" EF skills.

Participants

- Participants were recruited through a neighborhood parent education program run in two high-poverty neighborhoods.
- 40 mother-child dyads participated in the study, however, only 18 had complete data.
  - The majority of mothers (83.3%) identified as African American and 38.9% had a high-school diploma or less.
  - The average age of the children evaluated in this study was 3.66 years (SD = 2.61 years)

Measures

- Upon enrolling in the parent education program, mothers interested in participating in the study completed a series of questionnaires to assess (a) their own emotional regulation skills and (b) the executive functioning skills of their child

Maternal Emotion Regulation

- Mothers completed the Regulation of Emotion subscale of the Wong & Law Emotional Intelligence Scale (Wong & Law, 2002). The subscale asked mothers to rate on a scale of 1 (*strongly disagree*) to 7 (*strongly agree*) how much they agree with statements regarding their ability to control their temper and control their emotions.
- The mean score of these four items was used as a composite emotion regulation score; higher composite scores indicated better emotion regulation skills. The mean composite score among mothers was 5.88 (SD = 1.00).

Child Executive Functioning

- Mothers completed the Childhood Executive Functioning Inventory (CHEXI; Thorell & Nybery, 2008), a parent-report measure of children's working memory, planning abilities, self-regulation, and inhibition. Parents reported how well a series of questions described their child on a scale of 1 (*definitely not true*) to 5 (*definitely true*). After data collection, items were reverse-coded such that higher scores indicated better executive functioning skills.
- A "cool" EF composite score was calculated by taking the mean of responses on the working memory and planning subscales.
  - M = 3.43 SD = 0.98
- A "hot" EF composite score was calculated by taking the mean of responses on the self-regulation and inhibition subscales.
  - M = 3.15 SD = 0.94

Results

- We analyzed the relationship between maternal emotion regulation and child EF skills using multiple linear regression
- Mothers' reported emotion regulation skills were not found to be significantly associated with their child's exhibited "cool" EF skills (b = 0.27, SE = 0.28), t(11) = 0.96, p = .36 or their child's "hot" EF skills (b = 0.24, SE = 0.26), t(11) = 0.90, p = .39.
- Post-hoc analyses found that mothers' self-control skills as evaluated by the Tangney Self-Control Scale (Tangney, Baumeister, & Boone, 2004) were significantly correlated with children's "hot" EF skills (b = 1.24, SE = 0.27), t(11) = 4.57, p < .001.

Limitations

- Missing data substantially limited sample size as only 18 mother-child dyads had complete data on all measures included in these analyses.
  - A post-hoc power analysis revealed that given the effect size observed in the present study (f^2 = .074), a sample size of approximately 109 mother-child dyads would have been required to obtain statistical power at the .80 level.
- There appeared to be a "ceiling effect" among mothers' reported emotion regulation skills. On a scale of 1-7, the lowest composite score of emotion regulation was a 4 (M = 5.88, SD = 1.00).
- This suggests that maternal ratings of emotion regulation may have been affected by social desirability bias.

Future Directions

- In addition to collecting data from a larger sample of parent-child dyads, future studies should utilize measures of emotion regulation that measure specific emotion regulation behaviors as opposed to measures that require participants to make global assessments of their emotion regulation skills.

References

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