



# Parenting

## Science and Practice

ISSN: 1529-5192 (Print) 1532-7922 (Online) Journal homepage: <https://www.tandfonline.com/loi/hpar20>

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To cite this article: Christine Hechler, Roseriet Beijers, Marianne Riksen-Walraven & Carolina De Weerth (2019) Studying Quality of Caregiving Behavior: The Roles of Infant, Mother, Father, and Culture, *Parenting*, 19:1-2, 133-136, DOI: [10.1080/15295192.2019.1556021](https://doi.org/10.1080/15295192.2019.1556021)

To link to this article: <https://doi.org/10.1080/15295192.2019.1556021>



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Published online: 01 Feb 2019.



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# Studying Quality of Caregiving Behavior: The Roles of Infant, Mother, Father, and Culture

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## SYNOPSIS

This study showed that prenatal quality of caregiving behavior toward a crying simulator infant predicted the postnatal quality of caregiving behavior of both mothers and fathers.

In this study, we sought to identify prenatal predictors of the quality of postnatal maternal and paternal caregiving (Hechler, Beijers, Riksen-Walraven, & de Weerth, 2019). In a low-risk, healthy population, observed prenatal quality of caregiving behavior toward an unsoothably crying simulator infant positively predicted postpartum quality of caregiving toward the own infant in both mothers and fathers. We received three commentaries to our manuscript, from Lin, Bisson, and Sanborn (2018), Wong and Esposito (2019), and Lee (2019). We are thankful to these authors for their insightful thoughts and ideas on how to better understand and improve the predictive value of prenatal observations with a simulator infant by taking into account the unique roles of the infant, mother and father, and culture. Below, we address these unique roles separately.

## ROLE OF THE INFANT

Our study used a simulator infant that cried during most of the interaction episode, unresponsive to soothing attempts by the expectant parent. This setup imitates a natural situation, as most parents have to deal with their infant crying unsoothably at times (Barr et al., 2014; Barr, Paterson, MacMartin, Lehtonen, & Young, 2005), even if the infant does not have a difficult temperament or medical condition (Lin et al., 2019). Although suitable for a standardized first study of this kind, the situation is limited and does not generalize to most caregiving situations in which infants do respond to parental (soothing) behavior.

We agree with Lin et al. (2019) that future studies using infant simulators would do well in increasing the ecological validity of simulation paradigms by imitating real-world contexts more closely. This could be done by having the simulator infant react to parental caregiving attempts, extending the parent-simulator infant interaction over longer periods of time, using more diverse levels of simulator infant crying (i.e., imitating “easy” and “difficult” infants), and letting expectant parents care for the

simulator infant at home (Bakermans-Kranenburg, Alink, Biro, Voorthuis, & van IJzendoorn, 2015; Voorthuis et al., 2013).

Lin et al. (2019) also note that behaviors and characteristics of the simulator and own infant (e.g., gender) were also not taken into consideration. Again, given the unprecedented nature of our study, as well as the limited sample size, we kept the design standardized and as simple as possible. Note also that, although for ethical and standardization reasons, we did not carry out the postnatal interaction when the infant was “too upset,” only  $n = 6$  out of a total of  $N = 130$  potential parent-child interactions had to be canceled for this reason. Including more infant characteristics that may influence parental behavior would be an interesting next step in future studies on larger cohorts. Wong and Esposito (2019) noted that atypical infant crying due to neurological deficits or autism may also affect parenting quality. Using a simulator infant resembling an infant with neurological deficits (for example, by letting the simulator infant cry without a pattern, or with a different pitch; St. James-Roberts, 2012) and testing parents from risk groups of having a child with atypical behaviors would be ways to increase ecological validity in the future.

### ROLES OF MOTHERS AND FATHERS

Wong and Esposito (2019) state that the predictive value of observations with the simulator infant might decrease when parents display atypical behaviors after a child is born, e.g., postpartum depression and anxiety. This relevant point can be investigated by carrying out a study on expectant parents at risk for developing postpartum mental health problems.

We further agree with Lin et al. (2019) that a strength of our study is including fathers in the delineation of caregiving, as many caregiving simulation studies in the past only used females. Nonetheless, they are concerned that because males have less experience playing with dolls, the simulation may be unnatural to them, and so less predictive of paternal behaviors. However, our manipulation check showed that fathers found the interaction as difficult and cared for the simulator infant as seriously as mothers (Hechler et al., 2019). Moreover, prenatal caregiving behavior predicted postpartum caregiving behavior in both mothers and fathers. We are thus confident that the simulator infant can be used with both parents.

Based on Lin et al. (2019) and our own ideas, we think that the ecological validity in the design would be improved by observing parental behavior in different caregiving situations (e.g., feeding, bathing, putting baby to bed) and non-caregiving situations (e.g., play).

### ROLE OF CULTURE

Lee (2019) proposes studying cultural similarities and differences in ideology in parents to take the scientific understanding of caregiving to the next stage. We agree that it would greatly add to the value of this type of research if our study were repeated in different cultures, as most research to date has been conducted in Western countries (Mesman, van IJzendoorn, & Sagi-Schwartz, 2018). Parental sensitivity is important for forming a secure attachment in most cultures (Mesman et al.,

2018), but amounts of, and parental reactions to, infant crying differ between cultures. In Japan, for example, infants cry less compared to infants from Western countries (Wolke, Bilgin, & Samara, 2017), and crying is seen as a sign of health and is relatively accepted (Fujiwara, Yamaoka, & Morisaki, 2016). Moreover, as Lee (2019) notes, cultures vary in the extent to which parents are supported by in-group members. In some cultures, moreover, alloparenting (i.e., care for offspring by someone other than the parent; Burkhardt, Hrady, & van Schaik, 2009) is common. In line with these findings, varying amounts of simulated crying, simulating crying that matches the typical amount of infant crying in the specific culture, and including interpersonal network quality as a possible predictor would be fruitful manners of testing and improving the predictive power of prenatal caregiving observations with a simulator infant across cultures.

Incorporating the suggestions provided above in future research would make the use of a simulator infant and the pre- to postnatal prediction of maternal and paternal caregiving behavior more ecologically valid and culturally sensitive.

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#### ARTICLE INFORMATION

**Conflict of interest disclosures:** Each author signed a form for disclosure of potential conflicts of interest. No authors reported any financial or other conflicts of interest in relation to the work described.

**Ethical principles:** The authors affirm having followed professional ethical guidelines in preparing this work. These guidelines include obtaining informed consent from human participants, maintaining ethical treatment and respect for the rights of human or animal participants, and ensuring the privacy of participants and their data, such as ensuring that individual participants cannot be identified in reported results or from publicly available original or archival data.

**Funding:** This work was supported by financing the first author's PhD position from the Behavioural Science Institute, Radboud University Nijmegen, The Netherlands.

**Role of the funders/sponsors:** None of the funders or sponsors of this research had any role in the design and conduct of the study; collection, management, analysis, and interpretation of data; preparation, review, or approval of the manuscript; or decision to submit the manuscript for publication.

**Acknowledgements:** We would like to thank the participating parents, and the students who helped collect the data. The ideas and opinions expressed herein are those of the authors alone, and endorsement by the authors' institutions is not intended and should not be inferred.

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