# Development and Initial Testing of the Parent Beliefs about Early Childhood Social–Emotional Development Instrument

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## ABSTRACT

*Background:* No instrument exists to measure parent beliefs about early social–emotional development, which is foundational for child outcomes. We developed and tested an instrument to measure parent beliefs.
*Methods:* Positive parenting was defined from the literature and 84 items were developed based on the theory of planned behavior (TPB). The instrument was tested with mothers ($N = 200$) from the United States.
*Results:* Data support our initial supposition of five factors based upon the TPB, which accounted for 65.5% of the total variance.
*Conclusion:* The instrument demonstrates strong initial psychometric properties and is ready for further testing.
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Early childhood social–emotional development provides the foundation for health and social welfare and prevention of psychopathology throughout childhood and into adulthood (Duncan, Ziol-Guest, & Kalil, 2010; Shonkoff, Richter, van der Gaag, & Bhutta, 2012). A nurturing environment, including positive parenting behaviors, supports optimal child development (Belsky, Hsieh, & Crnic, 1998; Belsky, Robins, & Gamble, 1984; Bradley, 1995; Bradley & Caldwell, 1995; Bradley, Corwyn, Burchinal, McAdoo, & Garcia Coll, 2001; Bronfenbrenner, 1986). Socioeconomic status influences both parenting behavior (Bornstein & Bradley, 2003; Day, 2011) and child outcomes (Day, 2011; Downer & Pianta, 2006; Duncan et al., 2010; Landry & Smith, 2011; Landry, Smith, & Swank, 2006; Sameroff, 2010). Children from low-income, minority, and/or low-education families are at increased risk for adverse outcomes (Bradley & Corwyn, 2002; Brooks-Gunn, Rouse, & McLanahan, 2007). Supporting the development of positive parenting behavior, especially for families at risk for maladaptive parenting, is critical in changing the cross-generational transmission of parenting styles (Conger, Belsky, & Capaldi, 2009; Shaffer, Burt, Obradovic, Herbers, & Masten, 2009) and in supporting optimal child outcomes. Parents from low-socioeconomic status backgrounds are frequently enrolled in federal and state parenting programs such as Healthy Start, but measurement of parents' attitudes toward social–emotional development has not, traditionally, been included in these programs and, thus, cannot be addressed with appropriate interventions.

Even with recognition of the importance of early childhood environments and positive parenting, much remains unknown about how to best promote positive parenting and prevent negative or harsh parenting. The first step is to develop an instrument to accurately measure the concept of parent beliefs about social–emotional development since there is no existing instrument (Streiner, Cairney, & Norman, 2015, p. 4). Measurement of the concept should be guided by a sound theoretical framework and focused on the drivers of behavior.

## THEORETICAL FRAMEWORK

Since the ultimate goal of the project is to support positive parenting behaviors, the theory of planned behavior was used to frame the instrument. The theory of planned behavior (TPB) has been well-supported in its usefulness to predict health related behavior (Ajzen, 1985, 1991; Andrews, Silk, & Eneli, 2010; Duncanson, Burrows, Holman, & Collins, 2013; Montano & Kasprzyk, 2008). The theory of planned behavior suggests that one's health-promoting behaviors are predicted by one's behavioral *intentions*, which are predicted by one's *attitudes* toward the behavior, *subjective norms* about the behavior, and *perceived behavioral control* of the behavior (Ajzen, 1985, 1991; Francis et al., 2004). In brief, attitudes refer to one's beliefs about the behavior and include positive and negative judgment of the behavior and consequences of the behavior. Subjective norms refer to one's beliefs about how they think others who are important to them think they should behave. Lastly, perceived behavioral control is made up of two component parts, controllability and self-efficacy. Controllability includes one's beliefs that a behavior is under their control while self-efficacy refers to one's confidence that he/she has the ability to perform or not perform a

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particular behavior. The goal of the current study is to develop and test an instrument to measure parent beliefs related to social–emotional development in early childhood. Once again, there is no existing instrument to measure this important variable.

## METHODS

### Instrument Development

Based on classic measurement theory and guides to development of health measurement scales (Adamsbaum, Mejean, Merzoug, & Rey-Salmon, 2010; DeVellis, 2012; Streiner et al., 2015), the construction of the Parents Beliefs about Early Childhood Social–Emotional Development Instrument proceeded in phases. Phase 1 utilized a concept analysis. Using the Walker and Avant's (2005) method of concept analysis, the exact meaning of the words (parents' beliefs about social emotional development of infants) was clarified. Publications were reviewed from experts in the field, previously described in the Introduction. From the literature, the authors defined the attributes of positive parenting to include warmth, lack of hostility, provision of a safe and stimulating environment, encouraging exploration, discipline, and spoiling. With guidance from Francis and colleagues' manual on constructing questionnaires based on the theory of planned behavior (Francis et al., 2004), 84 items were created that addressed each component of the theory.

Phase 2 of the study included testing of the instrument with new mothers. All procedures were approved by the university's institutional review board. All participants provided passive consent.

### Sample

A convenience sample of new mothers were recruited from the waiting room of two academic primary care pediatric offices in an urban location in the southern United States. For this initial study, fathers were not included as our previous experience in this setting indicated that we would have not have sufficient numbers of fathers to make comparisons, and parent beliefs may differ between mothers and fathers. Inclusion criteria included mothers of children between 4 and 48 months of age. All mothers seeking care for their children that met the study criteria were asked to participate. On average, mothers $N = 200$ were 25.01 ($SD = 4.7$; range 18–44) years of age and represented by the following races/ethnicities: 2.5% Hispanic, 49% African American. 41% non-Hispanic White, and 10% multiple or other. Eighty-five percent of the sample received Medicaid services, 3.5% had no insurance, and 11% had private insurance. Educational attainment of the sample is as follows: 18.1% less than high school; 40.2% high school diploma or equivalent; 31% vocational training or 2-year degree; and 10.5% with 3 years or more of college with 4% of those having a 4-year college degree.

### Instrument

The Parent Beliefs about Early Childhood Social–Emotional Development Instrument consists of 84 items on a Likert-type scale ranging from 1 = *strongly disagree* and 7 = *strongly agree* (see Table 1). Below is the mapping of the items onto the construct. Items that were reverse-coded prior to analysis are indicated by (R).

Attitudes—4, 5 (R), 10 (R), 15, 38, 40, 42 (R), 46 (R), 68, 72 (R), 73, 76,
Intentions—7, 14, 17 (R), 18, 29, 33 (R), 34, 41, 47 (R), 54 (R), 57, 81
Normative beliefs—3, 9, 22, 23 (R), 35, 43, 48, 50 (R), 56 (R), 70, 77 (R), 84 (R)
Perceived control
   a Self-efficacy—1 (R), 2, 6 (R), 8, 11, 13, 26, 31, 39, 44 (R), 49, 51, 52, 53, 55, 58, 59 (R), 61, 63, 65, 75, 79, 80 (R), 82

   b Controllability—12, 16, 19, 20 (R), 21 (R), 24 (R), 25, 27, 28, 30 (R), 32 (R), 36 (R), 37 (R), 45 (R), 60, 62, 64 (R), 66 (R), 67, 69 (R), 71, 74 (R), 78, 83

## STATISTICAL ANALYSES

Initially, a descriptive analysis was performed on the demographic data as well as the scores on the instrument. Since the authors developed the questionnaire, an exploratory factor analysis was performed on the initial 84 questions (Comrey & Lee, 1992; Gorsuch, 1983). The factors were extracted using maximum likelihood estimations, which permit hypothesis testing for the best number of factors to be retained (Comrey & Lee, 1992; Gorsuch, 1983). Extracted factors were then rotated using the VARIMAX technique (Kaiser, 1958). An oblique rotation (PROMAX) was also tested for use; however, the oblique rotation did not increase eigenvalues significantly. As a result, we report findings from the orthogonal rotation VARIMAX, to increase interpretability as well as achieve higher eigenvalues.

Individual variables were considered to be "strong loading" on each factor if they possessed factor loading scores 0.40. Variables that did not achieve this level were removed from subsequent analysis. In addition, parallel analysis and Velicer's minimum average partial test were used as validating procedures (Velicer, 1976). If these more sophisticated techniques suggested differing factors, factors from these techniques would be reported as a replacement for the factors reported from the more traditional techniques discussed above. Fortunately, results from the traditional methods held consistent, and results from the more sophisticated techniques are not reported for continuity and to reduce possible confusion. Five factors were retained via the factor analysis from above. Next, interdisciplinary maternal child health experts provided feedback on content validity of instrument. As a result, five index variables were constructed measuring the five factors and were made consistent with the expert panel's areas by the authors: (1) attitudes, (2) intentions, (3) normative beliefs, (4) perceived control, and (5) controllability. The five index variables were a summation of the questions comprising the factor they represented. The inter-rater reliability, intra-rater reliability, and internal consistency of the instrument were then evaluated using traditional techniques.

## RESULTS

### Reliability Measures

The total scale had moderate inter-rater reliability (Cohen's kappa = 0.718), high intra-rater reliability (intra-class correlation coefficient = 0.826), and good internal consistency (Cronbach's alpha = 0.692). The internal consistency of each subscale varied (Cronbach's alpha = 0.612 for normative beliefs, 0.648 for attitudes, 0.696 for intentions, 0.883 for self-efficacy, and 0.926 for controllability).

### Factor-Loadings

All 84 questions were included in the analysis and results were examined for low-loading variables. The Kaiser–Meyer–Olkin index of sampling adequacy was 0.70, which indicated that partial correlations were small and that the matrix was suitable for factor analysis (Tabachnick & Fidell, 2001). Bartlett's test of sphericity was statistically significant ($\chi^2 = 1251.39$, $p < 0.001$) and no evidence of multicollinearity or singularity was found using the recommendations outlined in Tabachnick and Fidell (2001), results not shown. These results showed that the factor analysis could be adequately performed. In order to determine the number of factors to retain, two methods were used: (a) the eigenvalues greater than 1 rule, and (b) the scree plot to identify the number of factors above the elbow to retain and rotate (Cattell, 1966).