

Author, year of publication, title and country	Aims	Methodology and data collection method	Sample and size	Method of analysis	Findings most relevant to this review	Quality including Kmet score and any limitations
BORNSTEIN et al. (2001)'Parenting Beliefs and Behaviors in Northern and Southern Groups of Italian Mothers of Young Infants.' Italy	'To evaluate intranational variation in the ways of northern and southern Italians believe and behave in their basic infant rearing':663	Quantitative. Cross-sectional. Questionnaires. Video observation.	Mothers of 5-month-old first born infants. Northern Italy n=42, Southern Italy n=40. N=82.	Inferential statistics	Mothers living in both regions reported that they engaged in more social than didactic behaviours. Northern mothers engaged in social behaviours with infants about 50% more than Southern mothers. Mothers from both regions spent twice as much time in didactic than social behaviours with their infants.	83% Study design not explicitly stated. Further information required as to how sample recruited – appears to be volunteer. Sample size appears small, no mention of power. Some data missing.
DALLAS et al. (2000) 'Gender differences in teen parents' perceptions of parental responsibilities.' USA	'To assess the knowledge and expectations of unmarried, low-income, Mexican American and African American adolescent mothers and their male partners regarding normal child development, paternal role behaviours, and their responses to efforts to formalize specific paternal responsibilities: 423	Qualitative. Data collected using interviews from focus groups.	Five Mexican American parenting couples and two African American parenting couples. N=7 couples. African American females in last trimester of pregnancy. Mexican American couples reported having at least one infant under 2 years.	Tape based analysis. Abridged transcript and moderators' verbal summary, plus field and summary notes analysed. Provisional code list from interview guide applied to data; coded to descriptive categories. Differences in	Differences identified between the perceptions of mothers and fathers with regard to; knowledge relating to child development, use of discipline, expectations of paternal role. Both groups believe physical punishment appropriate for children, but at different ages. Fathers recognise that arguing in front of children can be damaging, identifying that the most important paternal behaviour is providing emotional support. Fathers want to engage in enjoyable in activities with their child. Mothers feel that the father's most important behaviour is to be available to the child, and that paternal activity should centre upon the traditional provider role, sharing	85% Only one session of focus group interviews provided per group. Further field work/individual interviews useful to explore the perceptions of the parents in more detail. No consideration of researcher impact.

				codes between groups considered.	in activities alongside mother and child.	
<p>DEGOTARDI et al. (2008) 'He's got a mind of his own : the development of a framework for determining mothers' beliefs about their infant's minds.'</p> <p>Australia</p>	<p>'To analyse the ways in which mothers talked about their infants in order to determine the kinds of statements which could be usefully be taken as belief expressions.'</p> <p>'To develop a system of categorization which incorporates the full range of belief expressions in a way that would benefit current understandings of the relationships between beliefs and children's development':261</p>	<p>Longitudinal qualitative. Data collected when infant aged 12, 18 and 24 months. Data were collected using semi-structured interviews.</p>	<p>N=25 mothers with infants aged 12 months at the start of the study.</p> <p>Mothers recruited from Longitudinal Infancy Study of 100 families of diverse socioeconomic background.</p>	<p>Grounded theory.</p>	<p>Conceptual framework developed that demonstrates maternal beliefs about their infant's minds.</p> <p>Two categories generated whereby mothers describe 1. The actions of their child, so non-psychological descriptions. 2. Their child's person, the psychological view of their infant's mind. Psychological action categorised into three areas: 1. Mothers describe the child's psychological experiences (non-representational), 2. Mothers describe the child's ability to construct psychological experiences (representational), 3. Mothers describe the subjective wants of the child (representational).</p>	<p>85%</p> <p>Study design initially unclear, further information regarding sampling required. Some reflexivity demonstrated in terms of researcher's professional backgrounds but requires further development.</p>
<p>DONOVAN et al. (2007) 'Maternal self-efficacy, knowledge of infant development, sensory sensitivity, and maternal response during interaction.'</p> <p>USA</p>	<p>'To determine whether mothers varying in illusory control, potentially moderated by knowledge of infant development, showed differential sensitive responding in a feeding task, each mother with her own infant' :866</p>	<p>Longitudinal quantitative. Data collected when infant aged 6 and 9 months. Assessment of maternal tasks, video observation.</p>	<p>N=70 mothers with infant aged 6 months at start of study.</p>	<p>Inferential statistics.</p>	<p>Mothers ability to interpret positive and negative facial infant expressions related to illusory control and knowledge of infant development. Generally moderate illusory control associated with greater behavioural sensitivity and affect.</p> <p>Low maternal knowledge and low illusory control associated with less behavioural sensitivity.</p> <p>Moderate illusory control and high knowledge showed greater sensory</p>	<p>86%</p> <p>Further information regarding sample required.</p>

					sensitivity, compared with those with low and moderate knowledge. High illusory control and low knowledge associated with greater sensory sensitivity than if high illusory control with medium or high knowledge.	
HANE et al. (2006) 'Contextual basis of maternal perceptions of infant temperament.' USA	'To illustrate that the relations between maternal and observer based ratings of infant temperamental positivity and negativity are moderated by the infant's affective state during routine home based interactions with mother': 1079	Quantitative. Cross sectional. Data collected when infant aged 9 months. Data were collected using assessments in lab, questionnaire and video observation at home.	N=59. Mothers and infants recruited from larger longitudinal study when infant aged 4 months.	Inferential statistics.	Agreement of mother and observer ratings of infant negativity when infants demonstrated high levels of negative emotion during routine home based activities. Agreement of mother and infant positivity when low mutual positive emotion between infant and mother during play.	81% Further information required regarding sampling strategy.
HARWOOD (1992) 'The influence of culturally derived values on Anglo and Puerto Rican mothers' perceptions of attachment behavior.' USA	'To examine the influence of cultural values on mothers' perceptions of attachment behaviour': 823 A two part study: Part 1: 'indigenous concepts of desirable versus undesirable toddler behaviour were elicited using open-ended probes. Part 2: 'built on study 1 in that mothers' perceptions of Strange Situation	Quantitative. Part 1: cross sectional. Data collected using structured interview and maternal assessments. Part 2: cross sectional. Data collected using structured interview and maternal assessments. Questions/assessments based upon data gathered from part 1.	Part 1: N=48 mothers with at least one infant aged between 12-24 months. 16=lower class Anglo mothers 16=middle class Anglo mothers 16=Puerto-Rican mothers, resident in mainland USA. Part 2, fresh recruitment. N=48 mothers	Part 1 Coding of concepts. Inferential statistics. Part 2 Coding of concepts Inferential statistics.	Anglo mothers focused on characteristic/behaviour associated with individual autonomy. Puerto Rican mothers focused on behaviour/characteristic associated with respectfulness.	83% Further information regarding study design required. No mention of sample size calculation.

	behaviour were compared using the vignettes and descriptors generated on the basis of mothers' responses in Study 1' :823.		with at least one infant between 12-24 months. 16=lower class Anglo mothers 16=middle class Anglo mothers 16-Puerto-Rican mothers, resident in mainland USA.			
HARWOOD et al. (1996) 'Culture and class influences on Anglo and Puerto Rican mothers' beliefs regarding long-term.' Mainland USA and Puerto-Rico	'To examine cultural differences in parental beliefs regarding desirable and undesirable long term socialization goals and child behaviour; to attempt to disentangle the role played by culture and socioeconomic status as simultaneous sources for group differences in parental beliefs; to demonstrate that certain cultural constructs are central enough within each national culture to elicit general agreement and to manifest a broad level of shared discourse, despite within group variability': 2447 2 part study. Part 1: purpose 'to examine culture and class as simultaneous sources for	Quantitative. Part 1: cross sectional. Data collected using semi structured interview of four open ended questions. Part 2: cross sectional. Data collected using semi structured interview. Closed and open questions.	Part 1 N=100 mothers with infant aged between 12-24 months 20= middle class island Puerto Rican 20=island lower class Puerto Rican 20=middle class Puerto Rican Island 20=lower class Anglo American 20=middle class Anglo American 20=migrant lower class Puerto Rican Part 2 N=40 mothers with infant aged 12-24 months. 20=middle class Anglo American	Part 1: Coding of interview data. Inferential statistics. Part 2: Coding of interview data. Inferential statistics.	Part 1: Culture and socioeconomic status contribute independently towards beliefs about long- term socialisation goals for children. Culture associated more strongly with long -term socialisation goals for children. 'Proper Demeanour' the most commonly used ideal for all three groups of Puerto Rican mothers, whereas Anglo mothers described goals for their children that characterised 'Self Maximization.' Part 2: supports study 1. Anglo and Puerto Rican mothers place different values upon 'Self Maximization' and 'Proper Demeanour' even when SES controlled for.	80% No estimate of power size of sample.

	<p>parental beliefs regarding desirable and undesirable long-term socialisation goals and child behaviour':2448).</p> <p>Part 2: purpose 'to examine closely cultural differences in mothers' beliefs regarding desirable and undesirable child behaviour among middle-class Anglo and middle-class Puerto Rican mothers': 2456</p>		20=middle class Puerto Rican island resident			
<p>HUANG et al. (2005) 'Maternal Knowledge of Child Development and Quality of Parenting among White, African-American and Hispanic Mothers.'</p> <p>USA</p>	<p>'We sought to resolve some of the limitations in the literature and further investigate whether the association between maternal knowledge and parenting varies with race/ethnicity. Specifically, maternal knowledge was defined as maternal knowledge of developmental norms and milestones' :152</p>	<p>Longitudinal quantitative. Video observation, structured interview, questionnaire.</p> <p>Families surveyed when infants aged 2-4 months, and 16-18 months.</p>	<p>Recruited from a larger study of 5565 families. 658 families eligible to join study.</p> <p>N=378 families</p>	Inferential statistics	<p>56% = correct maternal estimate of child's development. White and Hispanic mothers had higher levels of child development knowledge than African-American mothers. Maternal age, wealth, education, depression levels, and marital status associated with levels of child development knowledge. For example, lower levels of education associated with negative impact upon maternal knowledge of child development.</p> <p>Knowledge of child development not associated with measures of parenting behaviours. However, lower levels of child development related to less sensitive interaction with child during a parent/child teaching situation.</p>	100%

					Maternal race/ethnicity associated with parenting behaviours.	
JESSEE et al. (2016) 'Maternal supportive behavior, cognitive talk, and desire/emotion talk at 24 months: distinct factors and differential antecedents.' USA	'Mental-state talk is an important parenting construct, yet it is not clear whether mental-state talk is distinct from other aspects of maternal behaviour, such as sensitivity and cognitive stimulation, or whether it coheres across different types of mental states (i.e. cognition, desire, emotion). The current investigation aimed to address these gaps' : 63.	Longitudinal quantitative. Questionnaire, video observation. Mothers surveyed when infant aged 1 and 6 months. Video observation at 24 months.	Recruited from a larger study of 1364 children and families. 1114 families for whom data was available on maternal mental-state talk were included. N=1114 families.	Inferential statistics.	Confirmatory factor analysis demonstrates that mothering behaviours of supportive behaviour, cognitive mental state talk and desire/emotional state talk are distinct from each other. Higher levels of maternal depressive symptoms at 1 and 6 months were significantly associated with lower levels of supportive behaviour at 24 months. Mothers that reported progressive rather than traditional parenting beliefs at 1 month had higher levels of supportive behaviour and cognitive state and desire emotional state talk.	83% Further clarification regarding sample required.
KELLER et al. (2003) 'Warmth and contingency and their relationship to maternal attitudes toward parenting.' Germany	'We assessed the relationship between behavioural measures of maternal sensitivity, warmth, and contingency toward positive and negative signals of 3 month old babies and self reported maternal attitudes':277	Quantitative. Cross sectional. Questionnaire, video observation.	60 mothers and infants aged 3 months.	Video data coded for components of parental behaviour. Inferential statistics.	Maternal sensitivity associated with maternal response to infant cues (contingency). Maternal sensitivity not associated with maternal warmth. Warmth and contingency not associated with maternal attitudes towards parenting.	80% Study design not immediately clear. Require further information relating to choice of sample and development of Likert Scale.
KURTH et al. (2014) 'Responding to a crying infant - You do not learn it.' Switzerland	'To better understand processes underlying first time and experience mothers' responses to infant crying and their comforting practices during	Longitudinal qualitative. Data were collected at 6-8 and 12-14 weeks postpartum. Interpretive phenomenology, using	15 mothers and infants. Infants aged 6-8 weeks onwards.	Case analysis. Thematic analysis exemplars.	With experience first time mothers perceived reasons/patterns to crying and used this information to manage their soothing techniques and personal stress.	80% Diversity of sample attempted, but sample includes mostly nurses. ? participant review of transcript.

	the first 12 weeks post birth' :743).	participant observation and interviews.				Reflexivity partial.
MILLER and HARWOOD (2002) 'The cultural organization of parenting: change and stability of behavior patterns during feeding and social play across the first year of life.'	'How cultural structuring of mother-infant interactions during everyday contexts such as feeding and social play changes during the first year of life, or the ways in which such changes may represent universal versus group-specific influences':245	Longitudinal quantitative. Data were collected when infants were 4, 8 and 12 months of age. Structured interview, video observation.	N=60 mothers and infants. 32 Anglo-American mothers and infants. 28 Puerto Rican mothers and infants.	Inferential statistics.	In identifying socialisation goals Anglo mothers perceived self - maximization to be important and their interactions with infants reflected this. Puerto-Rican mothers perceived placed more emphasis proper demeanour than self -maximization, interactions with infants emphasised interdependence of the infant upon the mother.	81% Study design not explicitly stated. Sample recruited via invitation.
USA mainland Puerto Rica						
MOSCARDINO et al. (2006) 'Cultural beliefs and practices related to infant health and development among Nigerian immigrant mothers in Italy.'	'To explore childrearing beliefs and practices among migrated Nigerian mothers of infants': 245	Qualitative. Ethnography. Data were collected using semi structured interviews.	N=29 first generation immigrant Nigerian mothers and infants aged 2-12 months	Thematic analysis	Developmental goals linked with independence and learning the Italian culture. Health care practices linked to psychological and physical characteristics of child. Emphasis upon prolonged physical contact between mother and baby important. For example, co-sleeping until age 3-8 years.	85% Further information on how sample recruited. Appears to lack participant observation, however authors integrated to local community.
Italy						
SEO (2006) 'A Study of Infant Developmental Outcome with a Sample of Korean Working Mothers of Infants in Poverty:	'This study was designed to replicate the research design and methodology employed in a Conrad et al. (1992) study using a sample of Korean working mothers living in high-risk environments':254. The	Quantitative. Cross sectional. Questionnaires. Structured interview. observation.	N= 42 mothers with infants aged 0-12 months. Recruited from a larger study N= 92 mother-infant pairs.	Inferential statistics.	Greater knowledge of infant development associated with more stimulating home environments, and infants with a higher level of development than mothers with a lower knowledge of infant development.	80% Clarification required relating to study design and how sample recruited. Sample size seems small, no power calculation provided.

<p>Implications for Early Intervention Program.'</p> <p>Korea</p>	<p>following questions were asked: 'Are there both main and interaction effects between maternal knowledge and maternal self- efficacy on parenting behaviour?' 'What are the predictors of infant developmental outcome?':254</p>				<p>Mothers with the most knowledge of infant behaviour showed better parenting behaviour.</p> <p>Maternal knowledge of infant development only significant predictor of infant development outcome.</p> <p>Although result not significant – higher maternal self -efficacy in terms of parenting resulted in lower scores of maternal knowledge of infant development, and infants with lower developmental scores.</p>	
<p>STOIBER and HOUGHTON (1993) 'The relationship of adolescent mothers' expectations, knowledge, and beliefs to their young children's coping behavior.'</p> <p>USA</p>	<p>'Explores the consequences of a specific category of cognitions-parental constructs that are considered to mediate the child-rearing system experienced by young children':64</p>	<p>Quantitative. Cross sectional. Questionnaires. Video observation.</p>	<p>N=40 mothers with infants aged 4 to 22 months.</p>	<p>Inferential statistics</p>	<p>Mothers who had more positive expectations for their own and their children's behaviour and emotions had children whose had more adaptive and effective sensorimotor and reactive behaviour coping; knowledge of child development and child rearing beliefs did not predict this.</p> <p>Interaction of maternal knowledge and child rearing beliefs and child's self- initiated coping behaviour. Higher levels of knowledge of child development and inflexible child rearing beliefs linked to the lowest level of self – initiated coping behaviour.</p>	<p>86% Clarity required regarding study design. No power calculation for sample size.</p>
<p>TURNER et al. (2008) 'The relationship of</p>	<p>'The relationships between maternal mentalization and executive functioning</p>	<p>Quantitative. Cross sectional.</p>	<p>N=64 mothers with infants aged</p>	<p>Inferential statistics.</p>	<p>Almost significant relationship found between mothers' ability</p>	<p>90%</p>

maternal mentalization and executive functioning to maternal recognition of infant cues and bonding.' UK	abilities and the recognition of emotion cues in infants and bonding in a non- clinical sample':501	Questionnaires and assessment tools.	between 3-48 weeks.		to attribute and the ability to recognise infant expressions. This suggests association between mentalization and being able to perceive infant emotions :509.	
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Table 1. Summary of studies included in systematic review