



First-Time Parents' Knowledge of Infant and Toddler Development: A Review of the Literature

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OVERVIEW

When mothers and fathers possess strong knowledge of parenting and child development, they are better able to help their children thrive.^{1,2} Child Trends reviewed the literature on parenting knowledge among first-time parents with young children (2 years and younger). Specifically, we examined research on what parents know and want to know about parenting and child development, where they get their information, and what sources of information they trust. Among our findings:

- **Most parents lack the knowledge they need and want.** Research strongly suggests that first-time parents of infants and toddlers want to know more about parenting and child development, yet they have difficulty obtaining clear and trustworthy information.
- **The amount of information available to parents is overwhelming and the quality is inconsistent.** There are numerous sources of information on parenting and child development (e.g., internet, newsletters, service providers, friends and family, etc.). However, the amount of information can be daunting to parents and the quality is inconsistent.
- **The sources of parenting and child development knowledge that parents use do not necessarily reflect their preferences for receiving information.** Parents often seek information on parenting and child development, but they do not receive sufficient information from preferred sources, such as pediatricians. Instead, they may turn to less-trusted sources like the internet.
- **Variability in parenting knowledge across groups of parents has not been well-examined.** Studies suggest considerable variation in parenting knowledge within samples of white, middle-class mothers, but little research has investigated this variation within and across other groups of parents (fathers; parents from various racial and ethnic backgrounds; families at different income levels; rural families), which could inform targeted intervention.
- **Little is known about what strategies are most likely to improve parenting knowledge.** Parenting interventions have demonstrated effectiveness in increasing parenting knowledge, but it is unclear which strategies are most effective and why.

Recommendations

Recommendations for research, practice, and policy—based on a review of the literature on parenting knowledge—include the following:

1. **Use more rigorous methods to study how parenting knowledge varies across groups of parents and how interventions can be tailored to their needs.** Researchers can build a strong evidence base that represents the full diversity of parents in the United States to help lay the foundation for effective policy and practice to improve parenting knowledge.
2. **Increase engagement of parents in discussions on parenting and child development.** Many service providers are well-positioned to engage parents in in-depth conversations about parenting and child development and to provide families with information and guidance. Policies and practices that support family engagement (e.g., professional development, adequate time with families during primary care visits) could improve parenting knowledge.

3. **Offer parents specific guidance on user-friendly sources that represent the best available evidence to date.** Parents benefit from clear, actionable, and science-based information on parenting, but they also need support to navigate the many sources available to them. Service providers can offer specific guidance to parents on how to identify credible sources and enhance their capacity to select and use this information successfully.
4. **Investigate strategies from other fields of practice to identify optimal methods of dissemination.** Fields of practice such as behavioral science, marketing, and public health have identified effective strategies for disseminating information. Policymakers, service providers, and researchers can identify and test strategies from these and other fields in the context of interventions to improve parenting knowledge.

Table of Contents

BACKGROUND.....	1
Definition of parenting knowledge	2
Purpose and focus of the literature review	4
LITERATURE REVIEW	3
Links among parenting knowledge, parenting quality, and developmental outcomes among infants and toddlers	5
What parents know about parenting and child development	7
What parents want to know about parenting and child development	10
Where parents get information on parenting and child development	13
GAPS IN THE LITERATURE	22
SUMMARY OF FINDINGS.....	23
RECOMMENDATIONS	25
CONCLUSION.....	26
APPENDIX A.....	27
Method	27
REFERENCES.....	29

BACKGROUND

In some ways, becoming a parent is an ordinary phenomenon—approximately 4 million babies are born each year in the United States alone.³ Yet the responsibilities that accompany parenthood are extraordinary. At almost no other time in life must adults devote themselves more fully to the needs of another human being. As our understanding of early childhood development and parenting has increased, so too have societal expectations that parents must provide the sensitive and responsive care that research tells us children need to thrive. Evidence across multiple fields of practice (e.g., psychology, social work, infant mental health, neuroscience, epigenetics, pediatrics, maternal infant health) affirm the powerful association between parenting quality and child outcomes.^{4,5}

Precisely what constitutes optimal parenting is a matter of considerable debate. As Barbara Rogoff, an acclaimed researcher on the cultural nature of human development noted, “There is not likely to be one best way.”⁶ Nevertheless, researchers have pursued this question for decades, and the evidence to date suggests that certain approaches to parenting lead to more favorable outcomes for children, although there are likely differences in approaches and outcomes across groups of parents.

The National Academies of Science, Engineering, and Medicine recently highlighted the importance of the following parenting practices for children from birth to age 8:⁷

- Contingent responsiveness (“serve and return,”⁸ or an adult’s response to a child that occurs immediately after a child’s behavior and is related to the child’s focus of attention,⁹ such as a parent smiling back at a child)
- Showing warmth and sensitivity
- Routines and reduced household chaos
- Shared book reading and talking to children
- Practices that promote children’s health and safety (e.g., prenatal care, breastfeeding, vaccination, adequate nutrition, physical activity and safety, monitoring)
- Use of appropriate (less harsh) discipline

Research on parenting indicates that parents who possess knowledge of how to engage in these practices immediately following their child’s birth (and even during pregnancy) are at a considerable advantage for ensuring their offspring’s welfare.⁷ This is because infancy and toddlerhood constitute sensitive periods of rapid brain development and physical growth¹⁰—one million new neural connections form every second¹¹—during which social experience (e.g., parent-child interactions) influences the structure and function of an infant’s brain,¹² helping lay the foundation for future well-being.¹³ Thus, the stakes of parenting during this period are high for children, families, and society.

The consequences of harmful parenting behavior (e.g., abuse and neglect) in the early years can have deleterious effects that reverberate throughout the lifespan, from impairment in early social-emotional, physical, and cognitive development, to problems with school achievement, to significant health and mental health problems in adulthood.^{14,15} However, parenting in infancy and toddlerhood also holds an unparalleled opportunity to steer a child’s development in a positive direction, even under adverse circumstances (e.g., poverty, trauma).^{16,17} Not

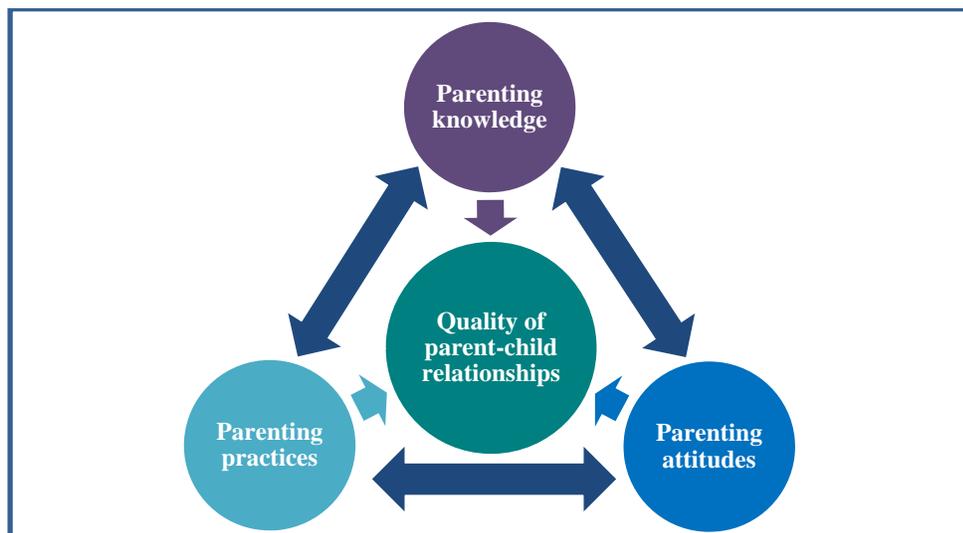
surprisingly, researchers, policymakers, program developers, and practitioners have made considerable efforts to support healthy parenting while children are very young.

Numerous interventions target parenting knowledge as a means of promoting healthy parenting.¹⁸ With appropriate supports, parents are likely to gain essential information about childrearing,^{19,20} yet we have remarkably little understanding of how best to promote parenting knowledge. To inform policies and programs designed to enhance parenting quality and child development, we need a thorough understanding of current research on parenting knowledge, as well as what gaps have yet to be addressed. The National Academies of Sciences, Engineering, & Medicine;⁷ American Psychological Association Task Force on Evidence-Based Practice with Children and Adolescents;²¹ the Centers for Disease Control and Prevention;²² and the World Health Organization²³ have all emphasized the need for policies and programs that enhance parenting knowledge. Clarifying and building the evidence base is an essential first step.

Definition of parenting knowledge

Broadly defined, *parenting knowledge* is an understanding of “developmental norms and milestones, processes of child development, and familiarity with caregiving skills.”²⁴ It is closely related to, yet different from, parenting *attitudes* and *practices*. *Parenting attitudes* refer to “parents’ viewpoints, perspectives, reactions, or settled ways of thinking with respect to the roles and importance of parents and parenting in children’s development, as well as parents’ responsibilities.”⁷ *Parenting practices*, on the other hand, are “parenting behaviors or approaches to childrearing that can shape how a child develops.”⁷ These three concepts are interrelated (see Figure 1). A mother’s attitudes about caregiving may influence how she translates knowledge into behavior.²⁵ A father may gain parenting knowledge through the act of caring for his child, which in turn affects his attitudes about parenting and confidence in the caregiving role.²⁶ In addition, parenting knowledge alone may not translate into positive caregiving practices.⁷ The current evidence base is insufficient to clarify the role of parenting knowledge and is much more limited than the literature on parenting practices.²⁷

Figure 1. Interrelations among parenting knowledge, practices, attitudes, and quality of parent-child relationships



There is a paucity of research on the influence of parenting knowledge among particular groups of parents (e.g., fathers; parents from various racial and ethnic backgrounds; families at different income levels; rural families). Historically, research in this area has been overlooked,⁷ yet without such information our capacity to meet the needs of the diverse range of families that make up the U.S. population is limited. The majority of literature focuses on mothers versus fathers, and does not adequately represent the full demographic variation of parents in the United States today. This is problematic, as some populations may be at a particular disadvantage regarding access to information on parenting and child development. For example:

- Approximately 22 percent of children live in families experiencing poverty,²⁸ and 16 percent live in rural areas of the United States²⁹—conditions which may impede parents’ access to the internet and other sources of parenting knowledge containing information about raising their children.^{30,31}
- Fathers have assumed a greater role in raising children in recent years. The vast majority (84 percent) of fathers 15 to 44 years old live with at least one of their children,³² and fathers are increasingly taking on the role of primary caregiver, with approximately 16 percent staying at home to care for their children.³³ Yet fathers are underrepresented in the research and often excluded from parenting interventions that could provide them with information about parenting and child development.⁷
- The limited research available suggests that black and Hispanic¹ families have less access to parenting resources (e.g., internet-based information)³¹ and may feel more distrust of medical professionals compared to white parents.³⁴ However, these studies do not explore potential reasons for parents’ distrust of medical professionals (e.g., historical interactions in which black and Hispanic communities were mistreated by the medical community).^{35,36}

An *ecological perspective* of child development and parenting, widely embraced by developmental scientists, suggests that the development and well-being of young children and their parents are influenced by both personal characteristics (e.g., temperament, age, sex, race/ethnicity, intelligence, education, mental health) and the broader contexts in which they live (e.g., family structure, financial stability, social networks, neighborhood and community characteristics, culture).^{6,37,48} Furthermore, individual and environmental factors interact to shape parenting.³⁸ Thus, a thorough review of the parenting knowledge literature must account for diversity in family characteristics and circumstances.

LITERATURE REVIEW

This literature review summarizes current evidence on what parents know and want to know about parenting and child development, where they get their information, and what information they find most useful. We also explore potential differences among groups of parents that have received little attention in the empirical literature, including fathers, parents from racial/ethnic minority groups and lower socioeconomic backgrounds, and rural families.

¹ We use the terms Hispanic and Latino interchangeably throughout this document. Due to the way race is categorized in much of the research, we use the terms “white,” “black,” and “Hispanic” to indicate mutually exclusive categories. Due to small sample sizes and lack of evidence, we do not address research with other racial or ethnic groups.

The literature review is divided into the following sections (see Appendix A for method):

- [Purpose and focus of the literature review](#)
- [Links among parenting knowledge, parenting quality, and developmental outcomes among infants and toddlers](#)
- [What parents know about parenting and child development](#)
- [What parents want to know about parenting and child development](#)
- [Where parents get their information on parenting and child development](#)
- [Conclusions and recommendations for future research, policy, and practice](#)

Purpose and focus of the literature review

The purpose of this review is to synthesize the literature on parenting knowledge to date, with specific attention to the following questions:

- What do parents know about childrearing and child development?
- Do they have more information in some areas than others (e.g., social-emotional development versus physical development)?
- What do parents most want to learn?
- From what sources do they get information?
- Where do they prefer to get their information?
- What type of information is most useful to them?

Focus on first-time parents of young children. This literature review focuses particularly on first-time parents of young children (age 2 or younger). We took this approach in light of evidence that new parents of infants and toddlers are especially receptive to information and ways of thinking about parenting and child development.^{39,40} As Bornstein notes, “nothing stirs the emotions or rivets the attention of adults more than the birth of a child.”⁴¹ Parents at high risk for engaging in harmful caregiving behaviors (e.g., abuse and neglect) also may not yet have firmly established parenting practices, providing a window for primary prevention.^{42,13}

We also highlight parents’ knowledge of their young children’s social-emotional and physical development, as healthy parent-child relationships form primarily through caregivers’ intensive efforts to meet the social-emotional and physical needs of their infants and toddlers.⁴³ Infants’ survival, in particular, depends upon caregivers possessing the knowledge and skills to meet their offspring’s needs in these areas (e.g., feeding, nutrition, sleeping, nurturing, protection from harm). The fact that babies cannot live a solitary existence is captured in Winnicott’s famous remark, “there is no such thing as a baby...a baby cannot exist alone but is essentially part of a relationship.”⁴⁴ In addition to ensuring their offspring’s survival, parents provide children with the social experiences they need to build healthy brains and become successful, contributing members of society,⁴⁵ including the ability to form secure early attachments and

Healthy parent-child relationships first form primarily through caregivers’ intensive efforts to meet the social-emotional and physical needs of their infants and toddlers.

healthy relationships later in life,^{46,47} the capacity to self-regulate emotional states and behavior, and the resources to cope with life stressors.⁴⁸

Links among parenting knowledge, parenting quality, and developmental outcomes among infants and toddlers

Existing research presents a compelling case that adequate parenting knowledge is essential to raising a healthy child, but the specific mechanisms by which this occurs is less clear.⁷ Examining research on associations among parenting knowledge, parenting quality, and children's developmental outcomes is useful in this regard.

There is a well-established link between what parents know and how they behave with their young children, which in turn affects child outcomes.^{24,49-52} For instance, rigorously designed evaluations of home visiting models that aim to improve parenting knowledge support this association. Parenting knowledge is critical to ensuring children's healthy growth and development, especially an understanding of how to soothe an infant, express love and affection, and respond to an infant's bids for attention, as well as good nutrition and safe sleep practices.^{7,53-56} Compared to mothers with limited knowledge of child development, mothers with more knowledge engage in higher-quality parent-child interactions, use more effective parenting strategies, and participate in more developmentally supportive activities with their children. They also have more appropriate expectations of their children, and in turn engage in more effective, less harsh discipline practices.^{1,2,57}

Associations with social-emotional development. Few researchers have examined associations between parenting knowledge and social-emotional development, but existing findings suggest a link. For example, a randomized control trial (RCT) study of low-birthweight, premature infants—approximately half of whom were black and half of whom had other racial and ethnic backgrounds—and their mothers (Benasich & Brooks-Gunn)²⁴ found that children of mothers with greater general knowledge of child development at 12 months were less likely to have behavior problems at 36 months relative to children of mothers with less developmental knowledge.²⁴ Furthermore, the intervention literature, including a number of experimentally designed studies, indicates that the best child outcomes occur when parents learn to attend to children's signals and respond sensitively (i.e., when the intervention teaches knowledge and application of parenting skills), as favorable social-emotional outcomes are explained in part by the quality of early parent-child relationships.⁵⁸⁻⁶⁰ Conversely, parents without certain types of knowledge may not interact with their children in ways that support their social-emotional development. For instance, mothers who are unaware that their infants and toddlers are attentive to people and environments are less likely to respond to their young children's efforts to interact with them.⁶¹

Associations with physical development. Research is relatively scarce on the relationship between what parents know about very young children's physical development and actual child outcomes. However, studies suggests that parents who have knowledge of evidence-based practices related to promoting physical health and safety (e.g., preventing injuries, caring for their nutritional needs) are more likely to engage in these practices.⁷

Reviews of the literature on young children’s physical safety show that parents who are knowledgeable about how to prevent injuries tend to maintain safer home environments and their children have a lower likelihood of experiencing unintentional injuries, compared to parents without this knowledge.^{62,63} In addition, a meta-analysis of home safety interventions (primarily RCTs) demonstrated that the knowledge parents gained led to better practices (e.g., proper storage of medicine and cleaning products, covers on electrical sockets, functional smoke alarms, safe water temperatures) and reduced child injuries.⁶⁴ Increased parenting knowledge of infant crying is also associated with reductions in injuries that lead to emergency room visits, regardless of the cause of the injury.⁶⁵

Other research shows a connection between parenting knowledge and young children’s physical health and development. For instance, a study of white first-time mothers from diverse socioeconomic backgrounds found that parenting knowledge is positively related to their infants’ skills in movement, balance, and exploration.⁶⁶ Another study with a sample primarily composed of white, middle-class, married mothers of low birthweight infants found a significant association between greater parenting knowledge at birth and infants’ motor development at 8 months.⁵² Another study on children of white parents who are aware of sun safety practices found that children experienced fewer sunburns compared to those with parents who had less knowledge about these practices.⁶⁷

What seems most clear from the literature is that there is considerable variation among parents about what they know about childrearing and development.

An important finding from the literature is a gap between what professionals recommend that parents do to promote their infant’s or toddler’s physical health and their actual caregiving practices. For example, a longitudinal, nationally representative study of mothers with healthy term and late preterm singleton infants found that nearly 50 percent of mothers do not follow recommendations for infant feeding practices; they stop breastfeeding before the recommended age or introduce nourishment other than breastmilk or formula before 4 months.⁶⁸ A cross-sectional study of new mothers found numerous reasons for why mothers report not breastfeeding (e.g., dislike, logistical difficulties such as pumping and safely storing milk at work, cultural beliefs and practices).⁶⁹ However, some mothers feel inadequately informed about how to breastfeed. Ogbuanu and colleagues conducted a descriptive study on breastfeeding and concluded that the strongest predictor of not initiating breastfeeding was the lack of hospital staff to teach mothers about the process.⁶⁹

Much of this research draws on small samples, cross-sectional surveys, and correlational methods;^{51,52,54,57,68,69} however, several rigorously designed RCTs and systematic reviews of studies with a variety of methodologies and samples support the conclusion that parenting knowledge is linked with child outcomes.^{24,60,64,67} Collectively, the evidence to support this association is strong, although further research is needed in certain outcome domains, such as children’s physical health. Additional studies of nationally representative samples of parents that utilize longitudinal methods also would bolster conclusions about the association between parenting knowledge and children’s physical development, and clarify any existing differences

among parents from various backgrounds. Because few studies have conducted subgroup analyses, it is unclear whether the association between parenting knowledge and child outcomes is the same for all groups of parents.

What parents *know* about parenting and child development

Parenting knowledge guides important decisions about caring for young children, including how to support their physical health,⁷⁰ emotional needs, and development of socialization skills.^{24,71} Fortunately, new parents tend to be active consumers of information on parenting, child health, and development. This presents important opportunities for service providers, programs, and public health initiatives to disseminate basic information that parents need about developmental norms, milestones, and caregiving practices that enable children to thrive.^{2,72} Two systematic reviews of studies of varying rigor (one review included only RCTs, and the other reviewed primarily correlational evidence) suggest that acquisition of parenting knowledge leads to positive changes in caregiving behavior.^{63,73} This may be especially true when parents gain knowledge in the context of positive, strengths-based relationships with individuals (e.g., family members, friends, professionals, paraprofessionals) who provide information, guidance, and support while viewing parents as experts on their children.^{74,75} Research in this area is limited, but several themes emerge from existing studies.

Parents' knowledge about raising children varies by topic. Evidence suggests that parents have more information in some areas of childrearing than others. For instance, a correlational study of white mothers of young children with low, middle, or high socioeconomic status (SES) suggests that they may be more knowledgeable about behavior management, health, and safety; and less knowledgeable about typical child behavior at specific points in time (i.e., developmental milestones).⁷⁶ Another study based on Canadian mothers (most were white and middle class) found that mothers are more knowledgeable about what distresses their children than about what comforts them when they are distressed.⁷¹ Studies using both nationally representative samples and samples of adolescent mothers have shown that parents of infants and toddlers believe they have inadequate information and confidence in the information they have to make informed decisions regarding immunizations⁷⁷ or to promote safe sleep practices.⁷⁸ One study utilizing a small urban² sample concluded that mothers receive more information about infant sleep positions (e.g., placing infants on their backs) than they do about how to engage their children motorically when infants are awake (e.g., “tummy time” to build muscles in their backs and necks, and reverse side effects of back sleeping to avoid Sudden Infant Death Syndrome [SIDS]).^{79,80}

Parents may underestimate the importance of development in the early years. Existing research shows that nationally representative samples of parents generally underestimate the importance of development in their children's earliest years.⁸¹ In particular, parents often misjudge the extent to which infant and toddler development is shaped by their environments, as well as their capacity for complex emotional responses to people and environments. For example, 62 percent of parents with young children in one study reported that children do not begin to “take in” and “react to” their worlds until they are at least 2 months old.⁸² However,

² Throughout this document, “urban” reflects the Census definition of a highly populated area (the opposite of which is rural). It may also reflect the location as best specified by the authors of a study, but is not meant to reflect characteristics other than geographical location.

even newborns are communicative, social beings with developing capacities to regulate emotions, form interpersonal relationships, and establish a sense of self and others.¹⁰ The existing literature focused suggests that many parents also underestimate the negative impact of adverse experiences (e.g., domestic violence, serious illness, death of a loved one) on the development of their infants and toddlers,⁸³⁻⁸⁵ even though case studies on infants as young as 3 months have been observed symptoms of posttraumatic stress.⁸⁶ In addition, mothers with lower levels of education have been found to believe that their children feel emotions, use words and sounds, and develop cognitive skills later than mothers with higher levels of education.⁸⁷

Parents may overestimate children’s skills in the early years. While parents underestimate the importance of early development for later well-being and success in life, they tend to overestimate their infants’ and toddlers’ abilities and skills. In one nationally representative study, nearly 3 of 4 parents (71 percent) believed that children are able to share and take turns before the age of 3, and more than half (56 percent) believed that children have the impulse control to resist doing something forbidden prior to age 3—despite the fact that such skills are not fully developed until later in life.⁸¹ A national study of Canadian adults concluded that few parents correctly answered at least 3 of 5 questions on both infant and toddler social development (7 percent of parents) and emotional development (2 percent of parents), and they expected children to reach early childhood milestones sooner than they typically occur.⁸⁸

Not all parents realize the benefits of having knowledge on parenting and child development. Although many parents report that they want information about childrearing, some do not. Not all parents believe that research on parenting and child development is useful, a belief that may vary across groups of parents. For example, a recent national study noted that approximately 50 percent of low-income (household incomes under \$55,000 per year) parents felt that new research could help them become a better parent, compared to 70 percent of parents with higher incomes (above \$55,000 per year).⁸¹ Other parents may feel they can parent effectively with the knowledge they have, but self-efficacy is not always enough to ensure good parenting. Two small studies—one of white, middle-class mothers and one of black, low-income mothers in Baltimore—found that mothers with a high sense of self-efficacy as parents but limited knowledge of child development have been found to lack sensitivity in interactions with their infants.^{89,90} This suggests that, across race and income, mothers with limited knowledge of child development may not exhibit the most developmentally beneficial parenting behaviors. It is also possible that some parents across sociodemographic strata simply do not realize the potential benefits of such knowledge, including feelings of competence, satisfaction, and investment in the parental role.⁹¹

Parenting knowledge may differ across groups of parents. Parents are not a homogenous group, and little is understood about how the type of information parents possess differs among various groups. There is insufficient research to elucidate differences in parenting knowledge among fathers versus mothers, parents who are Hispanic or black (within group differences) versus white (between group differences), those with varying levels of education and socioeconomic status, and those that live in rural versus urban areas.^{7,76} For example, research on white, European American, middle-class mothers has shown that they have a fair but incomplete understanding of basic parenting knowledge,⁷⁶ whereas there are few (if any) comparable studies with mothers from other racial or ethnic backgrounds. One longitudinal study with a

socioeconomically and racially diverse sample found that white non-Hispanic and Hispanic mothers were more knowledgeable than black mothers about parenting practices and child development, even after controlling for poverty status, maternal education, and marital status. Although this study was longitudinal, the results are correlational and not necessarily representative of the larger U.S. population.²

Some correlational evidence suggests that white parents are more knowledgeable about parenting and child development than black or Hispanic parents,^{51,92-94} although the quality of this evidence is weak and therefore inconclusive. These findings do not explore the underlying mechanisms that may explain this correlation. For example, limited income and education are associated with limited knowledge of child development, and income and education are confounded with race and ethnicity.^{95,96} This may also explain why some research that controls for income and education has concluded that white and Hispanic mothers have comparable parenting knowledge to each other, whereas others do not. In addition, measures of parenting knowledge often reflect white, middle-class beliefs and values on childrearing. Although some developmental milestones may be biologically universal, many are shaped by the context in which children live. Moreover, there may be cultural differences in how parents obtain information on child development. For instance, some research has shown that Latino immigrant mothers may expect doctors to provide developmental screenings and information without asking because that is standard practice in several South American countries;⁹⁷ on the other hand, white mothers tend to ask for information more directly because they know doctors are not likely to volunteer it. In short, caution is needed when interpreting racial and ethnic differences in parenting knowledge because the current research is largely exploratory in nature and does not yet adequately explain the underlying mechanisms of differences that may exist. The findings should therefore be considered inconclusive and highlight the need for high-quality research in the future.

What seems most clear from the literature is the likelihood of considerable variation in what parents know about childrearing and development.^{81,82} The lack of scientific rigor in many studies, however, make it difficult to draw firm conclusions about what might explain this variation. One explanation may be that certain parents have more access to information than others. The limited research available does suggest that black and Hispanic parents, as well as parents with limited income or education, tend to receive less information and anticipatory guidance (i.e., preventive advice) about childrearing, and have less access to technology-based parenting resources.⁹⁸⁻¹⁰⁰ Rural parents also have less access to sources of parenting knowledge. Nearly 20 percent of the total U.S. population lives in rural or nonmetropolitan counties (counties with 20,000 people or fewer), a percentage that remains the same among children.¹⁰¹ Rural parents are an understudied group and much of the research in this area is outdated. One study from the 1980s surveyed rural families in Montana and found that the average adult correctly answered approximately 60 percent of parenting knowledge questions (a poor score compared to other parent populations).¹⁰² However, additional research on rural parents, accounting (for example) for changes in rural families' access to technology, would be necessary to draw more definitive conclusions.

Although there is a consistent link between parenting knowledge and children's outcomes, there is far less consistent and rigorous evidence describing what parents know about parenting and child development, particularly among nonwhite mothers. Much of the cited research is with

small convenience samples. Several nationally representative studies can speak to group differences in parenting knowledge, but do not explore these group differences in ways that explain why they exist or what they may mean for parenting behaviors or child outcomes. This suggests an overall need for caution when generalizing findings about parenting knowledge.

What parents *want to know* about parenting and child development

First-time parents are eager to acquire knowledge about parenting and child development, especially during the early postnatal period. The onset of parenting is a vulnerable period for mothers and fathers—a time of sleep deprivation, upheaval of typical routines, and self-doubt about readiness to confront the everyday challenges of parenthood. It is a time when first-time parents seek information about parenting and child development to provide guidance, allay their fears, and boost their confidence.^{103,104} However, there is general consensus in the literature that many parents do not have the information they need or want to care for their children successfully.^{7,81} Below, we highlight some of the major themes.

Parents wish they had more information about parenting and child development. A recent cross-sectional survey of a nationally representative sample of 2,200 parents, conducted by Zero to Three and the Bezos Family Foundation, found that 54 percent of mothers and fathers with young children wished they had more information about how to be a better parent, and 69 percent would use positive caregiving strategies if they knew about them.⁸¹ This may be an underestimate, as another older, cross-sectional, nationally representative survey of over 2,000 parents with children under age 3 has indicated that up to 79 percent of parents wished they had received information in at least one of six different areas (how to encourage learning, how to discipline, toilet training, sleep patterns, crying, newborn care), and 53 percent wished they had information in three or more of these areas.¹⁰⁵ A second study using the same showed that more than half of parents never have the opportunity to discuss parenting topics that are appropriate to the age of their children with their pediatricians.⁹⁸

The small body of research on parents of young children, typically utilizing data from surveys or focus groups, suggests that parents are especially interested in obtaining certain types of information. The Zero to Three survey also found that parents are interested in certain types of information: more than half of parents wished they had more knowledge about children's emotional and brain development, and just under half wished they knew more about what to expect at different ages, how and when children develop self-control, and how their relationship with their child shapes development. More than 50 percent of parents stated an interest in obtaining information on more effective ways to discipline their child, and nearly one-third wished for information on how to identify when their child had a developmental delay. However, the survey was limited to a few child outcomes, and the field would benefit from additional investigation of what parents want to know about child development.

Parents' online information-seeking behavior can be particularly informative about their priorities. For instance, one study analyzed the content of online message boards for two of the most popular parenting magazines. The majority of posts were about feeding, eating, and sleeping issues among infants and toddlers. Other posts focused on general child development,

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toilet-training, and mother-child relationships. The general themes of parents' online questions revolved around when their children would be ready for the next stage of development (e.g., when to wean from breastfeeding, when children are ready to feed themselves independently), optimal caregiving routines and strategies (e.g., how to help children fall sleep or handle nighttime waking, successful discipline strategies), concerns about whether young children were developing properly or were "normal" (e.g., motor, language delays, or social-emotional delays), and resolving mixed messages from family members and professionals (e.g., the appropriate age for solid foods). Importantly, many posts expressed signs of stress, frustration, or exhaustion related to

parenting.¹⁰⁶ Caution should be taken when generalizing these findings, however, as online advice-seeking occurs more often among economically advantaged mothers compared to low-income mothers.¹⁰⁷

What parents want to know may differ across groups of parents. While there are considerable gaps in the extant literature on what different groups of parents want to know about parenting and child development, there is some evidence that differences do exist. For example, the Zero to Three study reported that parents with lower levels of education (e.g., high school degree or less) were most interested in acquiring knowledge about child development in general—and about young children's brain development in particular—than their counterparts with more education.⁸¹ Another study of primarily white, middle-class parents in Texas indicated that parents who have not attended college have a strong interest in specific topics (e.g., helping children have good relationships; facilitating their success in school; nutrition, health, and safety; and talking with children),¹⁰⁸ whereas parents who attended college are more interested in development and learning in general. In addition, mothers who live in poverty and have lower levels of education may be more concerned with learning about their young children's health and safety, perhaps because they are more likely to encounter dangerous environments than their higher-income and college-educated peers; however, these findings are drawn from selective samples of parents (e.g., those with children with special needs).^{109,110} Lower socioeconomic status is also associated with limited resources (e.g., time, money, energy, health, and young parental age). Parents who work more than one job to support their families may not have the time and energy or transportation needed to attend parenting classes or support groups. In other words, it is difficult to discern whether parents who live in poverty are actually less interested in certain types of knowledge than more affluent parents, whether they do not think certain types of parenting knowledge are useful for their individual circumstances, or whether they lack the resources to acquire it.

Still other studies suggest that what parents want to know varies by race/ethnicity, and that race/ethnicity moderates the association between material knowledge of child development and parenting behaviors.² For instance, one study found that Hispanic parents have a stronger desire for additional information and are more likely to believe that research on child development is helpful, relative to black or white parents.⁸¹ Finally, fathers may be especially interested in obtaining parenting information compared to mothers: 65 percent of fathers wished they had more information on effective parenting practices and 58 percent wanted to increase their understanding of brain development when children were very young (versus 57 percent and 41 percent for mothers, respectively).⁸¹ See Table 1 for further detail on demographic differences.

Table 1
Percentage of Parents Who Agree/Strongly Agree that They Want More Parenting Knowledge (n = 2,200)

Subsample	New research about child development can help me to be a better parent	I wish I had more information about how to be a better parent	I wish I had known more about brain development when my child was younger
Mothers	59%	47%	41%
Fathers	68%	62%	58%
White	62%	55%	48%
African American	60%	47%	50%
Hispanic	68%	63%	55%
Asian	73%	51%	61%
Annual income under \$35K	54%	42%	41%
Annual income \$35K to \$55K	51%	45%	44%
Annual income \$55K to \$75K	71%	61%	57%
Annual income greater than \$75K	70%	62%	54%
High school education or less	60%	51%	57%
Some college or Associate's degree	60%	49%	43%
Bachelor's degree	67%	58%	50%
Graduate/post-graduate degree	69%	62%	53%

Source: Zero to Three & the Bezos Family Foundation (2016)

No parent can know everything when it comes to raising a child, but research to date indicates that many parents are eager for information. For children to develop properly, infants and toddlers need their parents to understand the importance of sleep, nutrition, safe environments, sensitive care, and healthy parent-child relationships—and be able to translate this understanding into positive parenting behaviors. Acquiring parenting knowledge empowers adults to

understand the impact of children’s experiences on their development and to reflect on how they can parent in ways that optimize the chances that their children will thrive.^{111,112} However, the sources they use also influence their capacity to synthesize the information they receive, as well as the extent to which parents translate their knowledge into positive parenting behaviors.⁷

Where parents get information on parenting and child development

Parents turn to information on parenting and child development for guidance on raising their children.⁷⁵ Many parents are exposed to an abundance of information on child development, developmental milestones, and parenting strategies.^{7,81,113} Compared to previous generations, parents today have access to more information from a wider variety of sources.⁷

During the early childhood years, most parents seek and obtain information from the internet and other digital media (e.g., DVDs), social support networks (e.g., family, friends, clergy), print materials like books and magazines, and professionals and programs that serve parents with young children (e.g., early care and education providers, home visitors, medical personnel).^{7,81,113} Although they multiple sources of information to increase their knowledge of parenting, research suggests that parents are overwhelmed by the volume of material available to them.⁸¹ There is a glut of information on parenting practices on sleeping, feeding, and discipline for infants and toddlers in particular.^{106,114} However, much of the material and advice available to parents is untested, contradictory, and varies in quality and accessibility.⁷ Conflicting messages (e.g., contradictory information on how to promote positive sleeping and eating habits) can cause confusion and insecurity among new parents.¹⁰⁶

Parents are overwhelmed by the *quantity* of information, yet underwhelmed by the *quality* of information available on parenting and child development.

Overall, the literature indicates that parents are overwhelmed by the *quantity* of information, yet underwhelmed by the *quality* of information available on parenting and child development. According to the Zero to Three study, more than half of parents surveyed (58 percent) reported that “there is so much parenting information available that it’s hard to know whom to trust.”⁸¹ Similarly, nearly two-thirds of parents (63 percent) nationally are skeptical of parenting advice from those not familiar with their child and individual circumstances.⁸²

To help sift through the vast amounts of materials and information, parents tend to draw on resources that are most conspicuous. According to one online survey of 57 parents from diverse socioeconomic backgrounds (i.e., household incomes ranged from less than \$20,000 to more than \$100,000 annually; education levels ranged), some parents use a “gut” instinct when weighing conflicting advice.¹¹⁵ At times, they also seek information that contradicts previous advice. Ultimately, parents want high-quality information they can trust and employ several strategies to determine whether or not parenting information is dependable and accurate. For example, focus groups reveal that some parents assess the trustworthiness of websites containing pediatric health information by trying to determine if the sites have financial motives, seeking to

identify the original source of the information, and looking for repetition of information across sites.¹¹⁶

Internet. Online parenting information is convenient and accessible, and provides a way to reach a large audience at a low cost.¹¹⁷ Parents can seek information anonymously and at any time, whenever they are confused, stressed, or curious.¹¹⁷ An online survey by Madge and O'Connor of 155 new mothers in England with a predominantly white sample reported that being able to access online support and information increased their perceived confidence and empowerment.¹¹⁸

COMMON SOURCES OF INFORMATION ON PARENTING AND CHILD DEVELOPMENT

- Family
- Friends
- Television
- Apps
- Email
- Text messages
- Parenting books, magazines, and newsletters
- Services and programs (e.g., primary care, early care and education, home visiting, parenting programs)
- Public health

Results from focus groups, website content analysis, and reviews of the literature on online resources suggests that parents seek information via the internet for reassurance that their child's development and behaviors are 'normal,'^{106,116} and to obtain medical advice and diagnostic information.^{116,119} The perinatal period is a time in which mothers, especially, seek pediatric health information online. One study found that younger, first-time mothers are more likely than older, experienced mothers to access the internet for information when their child is experiencing acute symptoms, the doctor is not available to answer questions, and they are assessing whether to bring their child to the emergency room.¹¹⁶ These differences should be interpreted with caution, however, as they are drawn from a small sample of 20 mothers. Other research finds that mothers in the perinatal period turn to the internet when they have received conflicting advice—for example, when their own views conflict with a doctor's guidance.^{106,116} Perhaps this helps explain why many parents do not discuss information they find online with their medical provider.¹²⁰

Social media (e.g., Facebook and Twitter) and online parenting communities (e.g., message boards) are common sources of internet-based parenting information and social support.^{7,117,121} For instance, researchers in one study found that more than half of parents who have used social media encountered useful parenting information in the past month.¹²¹ Another study assessing parents' use of an online community determined that parents primarily searched for information on 'normative development,' although most of their participation involved connection with other parents on the site.¹²²

Apps, emails, and text messages. Parenting information has also become available via digital mediums such as smartphone and tablet apps, emails, and text messages. For example, one app

sends text messages to traditionally underserved expectant and new mothers, and has shown promise in changing mothers' health and parenting beliefs (e.g., around alcohol consumption in pregnancy).¹²³ However, digital media do not appear to be especially popular among parents. When asked to select which type of digital media was their preferred source of parenting information and advice from child development experts, over half of the parents selected websites and blogs (54 percent); about one-third preferred emails and smartphone/tablet apps (39 percent and 34 percent, respectively); and less than one-fifth opted for text messages (18 percent).⁸¹ It is possible that this low figure reflects limited availability of such resources.

Television. Parents also obtain parenting information by observing portrayals of parenting on television. In the Zero to Three survey,⁸¹ almost two-thirds of parents (64 percent) report getting parenting “advice, information or guidance” from these portrayals. Portrayals of parenting challenges and solutions on television can provide guidance to parents, and some stated that they wanted more information via this medium. Two-thirds of parents surveyed (66 percent) reported a desire for TV shows to portray the realities of parenting young children, and roughly two-thirds (64 percent) reported wanting to see more portrayals of parents overcoming parenting struggles with positive strategies via television shows. Television is also an efficient and low-cost means of disseminating information on parenting and child development.¹²⁴

Other research indicates that parents find television less helpful than family, books, friends, church, teachers, and counselors. Results from a study of over 700 mothers with children under 5 years old, the majority of whom were white and highly educated, suggest that parents rated television poorly as a source of information because they viewed it as entertainment rather than education.¹⁰⁸ More research is needed to assess parents' preference for parenting information via television, its usefulness as a source of support (e.g., normalizing parents' experience when they can relate to the characters), and as a source of new information. However, despite the rise in digitally delivered information, research with mothers who are white and well-educated suggests that many parents prefer traditional sources of information, such as books and advice from family and friends, which parents are most comfortable accessing.^{108,125}

Family and friends. The oldest form of obtaining parenting information is from family and community—mothers and grandmothers passing down folk wisdom and childrearing advice to new mothers.¹²⁶ Despite the abundance of sources now available, parents still turn most to family and friends for childrearing advice. The results of one study determined that 62 percent of parents receive information from spouses, 35 percent from mothers, and 24 percent from friends.¹⁰⁰ Not surprisingly, parents also consider family and friends to be their most helpful resources. For example, a study of parents with children ages five and under in child care rated family and friends among the most helpful sources of parenting information, with 69 percent and 54 percent rating family and friends as “helpful” or “very helpful,” respectively.¹⁰⁸

Obtaining information on parenting and child development through a social support network is also a common strategy among parents.¹²⁷ In a study of mothers with infants, researchers found that the use of informal sources of information on early development—such as information from family and friends—was more common than that from formal sources like doctors.¹²⁸ However, parents' increasing isolation and weakening social support systems may be causing a shift and fueling an increased use of the internet.^{117,129}

Despite the abundance of sources now available, parents still turn to family and friends most for childrearing advice.

When family and friends are sources of parenting knowledge, they offer concurrent social support. Parenting knowledge and support are somewhat intertwined in this way. For example, learning that a particular challenge is common can be both educationally and emotionally supportive for a parent.⁷⁵ This may make family and friends a more appealing source for information, even if the quality or accuracy of information is less reliable than that from medical professionals.

Parenting books, magazines, and newsletters. Parenting books and magazines have long remained a popular source of information. Recent research suggests that approximately 94 percent of parents rate print materials as the most common source of childrearing information.¹²⁵ In particular, there is an abundance of “how-to” books that parents of infants and toddlers turn to for advice on sleeping, feeding, and toilet training.¹¹⁴ Jacobson and Engelbrecht conducted a study of parents with children ages 5 and under and concluded that parents felt that books were highly useful sources of parenting information (69 percent of parents rated books as “helpful” or “very helpful”). The overwhelming amount of conflicting information presented in parenting books, however, requires parents to think critically about which parenting philosophies best align with their own.¹¹⁴

Newsletters are another common strategy for communicating information on parenting and child development, especially through parenting education programs, child care programs, and other early intervention programs. Studies have documented that parents highly value newsletters focused on childrearing, including monthly newsletters mailed to parents during their infants’ first year of life.^{130,131} Newsletters may be particularly useful for first-time parents. One evaluation found that a higher percentage of first-time mothers reported changing their parenting behavior in response to reading newsletters, relative to experienced mothers.¹³² Mothers also report discussing newsletter information with other mothers, which can lead to further information sharing and support.¹³⁰

Service providers and programs. Many parents obtain childrearing information from professionals, such as doctors, child care professionals, and staff from parenting programs; and from interventions aimed at increasing parents’ knowledge, improving parent-child interactions, and supporting young children’s development.

Physicians. Research documents that parents want more information from pediatricians on childrearing and other nonmedical issues than they currently receive.^{98,105} While the American Academy of Pediatrics and Bright Futures guidelines encourage pediatricians to discuss child development and parenting practices with parents during well-child visits,^{98,133} the majority of parents participating in a national survey reported that they had not received advice around most standard childrearing topics from their physicians. More than one-third of parents reported that they had not discussed newborn care, crying, sleep patterns, learning, discipline, or toilet training with their pediatricians.⁹⁸

One possible explanation for the lack of information sharing during primary care visits is that pediatricians do not have the time to discuss parenting in detail.⁹⁸ Providing parent education during well-child visits takes a considerable amount of a professional's time in a health care climate where efficiency is a priority.¹³³ It is also possible that pediatricians lack adequate training to discuss these topics in depth, or may not be confident that parents would find such information useful.⁹⁸

Research documents that parents want more information from pediatricians on childrearing and other nonmedical issues than they currently receive.

Pediatricians may be particularly important sources of information; research demonstrates that parents follow medical advice more than that obtained from any other source. For example, Moseley and colleagues¹³⁴ found that 94 percent of parents followed pediatricians' advice, compared to just 10 percent who followed advice from the internet, television, or newspapers. Given that parents follow pediatricians' advice, efforts to increase pediatrician engagement in discussing parenting and child development is likely to be a successful strategy for increasing parenting knowledge.

Early care and education professionals. Early care and education (ECE) professionals (e.g., those who work with young children in center-based and family child care programs) who successfully engage parents can be important sources of information, and can reinforce positive parent-child relationships, increase parent satisfaction with the ECE program, and support children's development.¹³⁵ ECE professionals often have training in early child development and in identifying social, physical, and other developmental delays. They also have experience observing effective parenting strategies because they have interacted with many families.¹³⁶ Studies have documented improvements in parenting knowledge and practices linked to parental engagement interventions,^{137,138} and ECE programs designed to engage families often have a

The literature supports the hypothesis that parents who are engaged in their child's early care and education are more likely to turn to care providers for information.

parenting education component that explicitly teaches parents about child development and positive parenting strategies.¹³⁹ However, ECE programs and parents often do not engage in this type of exchange and support. Two studies of parents with young children (ages 5 and under, and ages 8 and under) found that less than half of parents go to teachers for advice, and teachers were less frequently identified as a resource than family, friends, books, pediatricians, and the church.^{100,108} Although untested, researchers have hypothesized that the low rate at which parents utilize teachers for advice reflects a general distrust of nonmedical professionals and a lack of parental engagement in school.¹⁰⁸

Parenting education programs and interventions. Parenting education programs can be intensive and useful for promoting parenting knowledge, and studies highlight that those who participate often find them helpful.¹⁰⁸ Meta-analyses and individual studies confirm that both mothers' and fathers' parenting knowledge improves following parenting education.^{137,140,141}

However, one study found that parents rated these programs as less helpful than other sources of parenting knowledge, perhaps due to their low use,¹⁰⁸ as interventions delivered face-to-face suffer from low parent attendance.^{124,142} Researchers have begun to assess the benefits and drawbacks of various types of parenting education programs and interventions.¹⁸ However, evaluation findings reveal inconsistencies across parenting programs and the research base includes studies with various levels of rigor.⁷ For a brief overview of findings on parenting knowledge and parenting education programs and interventions, see Table 2.

Table 2. *The Impact of Parenting Education Programs and Interventions on Parenting Knowledge*

Program type	Summary of impacts on parenting knowledge
Early childhood education programs (including Head Start/Early Head Start)	Most research on the effects of early childhood education programs for families and parents (e.g., family engagement programs) examine school readiness and other child outcomes. However, there is limited evidence that these programs improve parenting knowledge. Programs that educate parents about their child’s school system and their roles and rights in their child’s education have medium to large effects of program participation on parents’ knowledge, self-efficacy, and parenting practices. ¹³⁷
Home visiting programs	Home visiting programs offer an effective way to provide parenting education. ¹⁴³ The basis of many models of home visiting is to improve parents’ knowledge of child development and enhance parent-child interactions. Multiple studies have found positive effects of home visiting on knowledge of parenting and child development. ¹⁴⁴ One meta-analysis found the effects of home visiting programs on parenting practices were largest when programs explicitly taught developmental norms, appropriate expectations for child behavior, and effective parenting skills. ¹⁴⁵ Many home visiting programs target high-risk populations, including incarcerated parents ^{146,147} and parents in substance abuse recovery, and have found positive program effects on parenting knowledge. ^{146,148} Although a number of evaluations of home visiting programs have documented positive impacts, it is difficult to detect consistent patterns across studies. ⁷
Parent support groups	Evaluation evidence is limited, but some parent mentoring and support groups have significantly improved parenting knowledge and practices. ¹⁴⁹ Evaluations of programs that include in-person support group formats find positive effects on parenting knowledge and behaviors, although the unique effects of the support groups were not established. ¹⁵⁰
Technology-based interventions	A meta-analysis underscores the positive impacts of technology-based interventions for parents and children. ¹⁵¹ A text-based intervention found that

Program type	Summary of impacts on parenting knowledge
Primary care interventions	<p>exposure to parenting knowledge through text was associated with changes in specific parenting beliefs targeted by the messages.¹²³ However, research is needed on parents with diverse racial/ethnic and SES backgrounds to assess potential variation in access and effects.⁷</p> <p>Few evaluations of primary care interventions have been conducted, although research has demonstrated some positive effects on parenting knowledge.⁷ For example, Healthy Steps for Young Children (a pediatric primary care program in which health specialists provide screening and support in conjunction with infant and toddler well-child visits) is associated with parents' increased knowledge of infant development, among other positive outcomes.^{152,153} Such interventions also document positive improvements in mothers' breastfeeding and vaccination practices, behaviors that improve with greater knowledge.^{69,154}</p>

Public health campaigns. One promising strategy for providing information on parenting and child development on a large scale is the integration of a public health campaign component into parenting education programs. Some programs include a public health component that targets a universal audience (e.g., the campaign component of the Triple P-Positive Parenting Program),¹⁵⁵ while others are disseminated via multiple parenting programs (e.g., the Centers for Disease Control's "Learn the Signs" public health campaign materials disseminated through national, state, and local programs). Evidence from an evaluation of parents who received materials through "Learn the Signs"—launched in 2004 to change parents' and professionals' perceptions about the importance of identifying developmental concerns early in life—demonstrated that more parents strongly agreed that they looked for the developmental milestones their child should be reaching following exposure to "Learn the Signs" campaign materials (66 percent in 2007 compared to 51 percent in 2004).¹⁵⁶ While public health campaigns can be effective in reaching a large audience, there may be inequalities in how easily different populations can access the information (e.g., disseminated online).⁷

Overall, the evidence on sources of parenting knowledge draws on studies with diverse populations and methodologies, providing a relatively strong evidence base for where U.S. parents obtain parenting information. Other exploratory studies reveal how parents use particular sources (e.g., what they look for in online content). Taken together, this research provides a general picture of where and how U.S. parents seek information on parenting and child development. However, there are important limitations to this research. First, most is descriptive and does not assess parents' behavior longitudinally or under different conditions (e.g., as a child ages, with the birth of a new child). Second, many studies do not examine group differences (e.g., gender, race, and socioeconomic status). Although some cited research uses large and representative samples, few have investigated variation in sources of information among different groups of parents.

Differences in sources of information among groups of parents. Research is mixed on whether sources of parenting knowledge vary with socioeconomic status. Berkule-Silberman¹²⁰ examined the relation between demographic characteristics (e.g., maternal high school graduation, high and low SES) and parents’ preferences for different sources of information (i.e., books, magazines, television, internet, doctors, family) among a sample of mostly immigrant, Latino mothers in New York. They found that: (a) mothers who graduated from high school reported that print, internet, doctors, physicians, and family sources were more important than did mothers who did not graduate from high school; (b) parents without college experience rated teachers and families as better sources of information than their peers with college experience; and (c) college-educated parents reported watching other parents and reading a book or article to be more helpful compared to parents without a college education.^{108,125}

There may also be a “digital divide” between parents with high and low SES, though the evidence is mixed. Some studies using surveys with over 1,000 parents, and more in-depth interviews with just over 100, found that parents with higher incomes were more likely to use the internet to find information on children and families than their lower-income counterparts.^{107,125} However, parents with lower incomes (less than \$45,000 per year) were more satisfied with the information they found online. Internet use and SES are positively related, and parents with higher SES use more targeted, sophisticated searching skills, as well as more accurate approaches to evaluating the credibility of sources.¹⁰⁷ As mentioned previously, such differences may be attributed to disparities in access to the internet—lower SES parents may lack readily accessible opportunities to seek and process online information.¹¹⁹ However, as the internet has become mainstream, some research indicates that socioeconomic differences in web access and use of parenting websites have declined. As internet access continues to expand, so does the ability for it to reach potentially vulnerable parents, like those who are young and unmarried.¹¹⁷

Parents are more likely to accept and apply information under certain conditions: when they perceive the source as credible and the information as helpful, and when they feel motivated and ready to change.

There are important caveats to research on the internet as a source of parenting knowledge: much of the research in this field occurred before smartphones and mobile internet access became common. In 2011, 35 percent of Americans owned a smartphone. In 2016, that number had risen to 77 percent.¹⁵⁷ In addition, individuals with yearly incomes under \$30,000 are most likely to be dependent on a smartphone for internet access, yet are most likely to have their smartphone access stopped or interrupted.¹⁵⁸ Moreover, some studies on internet use have identified racial and ethnic differences only to find that they dissipate at higher income levels, suggesting a conflation with poverty.¹⁵⁹

Parents living in rural areas also experience limited access to various sources of parenting knowledge, including the internet, health professionals, classes, and social services. Rural Americans are nearly twice as likely not to use the internet compared to those in urban and suburban areas.³⁰ Furthermore, rural areas have fewer doctors (9 percent of the physician

population for 20 percent of the total population) and often lose educated and talented young professionals.^{160,161}

Characteristics of effective information on parenting and child development. Researchers have just begun to examine the attributes of information sources that parents find most useful and effective. Overall, the literature indicates that the best sources of information on parenting and child development are:

- **Clear, actionable, and science-based:** information about brain development and early child development, including developmental milestones
- **Relatable:** sources that offer typical parenting scenarios and underscore the parental voice rather than expert opinion, as in media portrayals
- **Accessible:** information that is readily available, part of parents' everyday lives, and comfortable (e.g., family, books, friends, religious community)
- **Tailored:** specific to the child's age and developmental stage^{81,108,116}

Some evidence from studies with ethnically diverse families show that parents prefer self-administered sources—those they can seek out themselves (e.g., television and written materials)—versus other-administered (e.g., home visits, parenting groups).¹²⁴ However, additional research is needed to confirm this finding and to identify differences among black and Hispanic families, among others. For instance, studies on home visitation programs have found higher retention rates among Hispanic and black families compared to white families.¹⁶²

Using the right source at the right time. Different sources may also be most effective for different types of parenting knowledge. For example, in a review of the literature, Glascoe and colleagues¹³³ concluded that media campaigns are most useful for increasing parents' interest in a topic; verbally delivered information is most useful for brief and specific messages; written information is most useful for complex issues; and modeling/role-playing is especially useful when parents are experiencing challenges with their children.

Incorporating evidence on adult learning and motivation. Finally, integrating adult learning principles into strategies for disseminating information on parenting and child development leads to more effective interventions. Research on home visiting programs that provide parenting education, for example, suggests that these are most effective (i.e., parents learn best) when parents perceive that they or their children need help and when parents are invested in learning the material.¹⁶³⁻¹⁶⁵ Evidence also suggests that parents seek information and advice when they are interested in gaining specific knowledge. For example, parents search for information about pregnancy when they are in the early stages of pregnancy, about early childhood and life with a baby when they are close to delivery, and about development transitions (e.g., going to kindergarten) when changes to family life or structure occur.

Parents are especially predisposed to receiving and applying information on parenting and child development when they are still establishing their ideas and behaviors
Goodnow, J. (2012).

Parents are especially predisposed to receiving and applying information on parenting and child development when they are still establishing their ideas and behaviors.¹⁶⁶ In other words, it is more effective to reach out to parents before parenting practices and attitudes have been cemented. Furthermore, parents are more likely to accept and apply information under certain conditions: when they perceive a source as credible¹⁶⁷ and the information as helpful,¹⁶⁵ and when they feel motivated and ready to change.^{164,168} Finally, to improve information retention and inspire positive practices, information should be broken down into small, actionable steps that clarify how information can be incorporated into behavior. If knowledge is presented without any discussion of how the receiver can incorporate it, action is unlikely and information may be discarded or forgotten.¹⁶⁹

GAPS IN THE LITERATURE

A number of important limitations to the existing literature on parenting knowledge are described below. First and foremost, our review highlights the need for additional equitable, rigorous research to explore parenting knowledge across the increasingly diverse population of U.S. parents. Such research would allow us to better understand when, how, and why parenting knowledge varies across groups, but would also inform interventions. A stronger evidence base is also needed for policy and practice by employing more rigorous research methods.

Most research to date has been conducted with mothers who are white, middle class, or at risk for poor parenting. The evidence base on parenting knowledge is largely focused on two groups of parents: (1) white mothers who are financially stable; and (2) mothers at high risk for poor parenting (e.g., adolescent mothers, mothers with depression, mothers living in poverty).^{170,171} We do not know whether and how the association between parenting knowledge and children's development differs for other groups of parents. For example, fathers have a unique influence on children's development (e.g., relative to mothers, they spend a larger percentage of their time in one-on-one interactions with their young children engaged in stimulating, physical, playful activity that tends to promote independence),^{172,173} yet we understand little about effective strategies for improving their parenting knowledge.⁷ There is also a paucity of studies on how parenting knowledge affects parenting quality among families from different racial and ethnic backgrounds, including black, Hispanic, and other groups not considered in this review, such as Asian and Native American families. We also know little about how parenting knowledge affects quality among families from all socioeconomic backgrounds, with similar gaps in the literature on what parents know and want to know about parenting and child development, as well as sources of information they trust.⁷ Moreover, current research confounds race and SES, suggesting a particular need for studies of parents who are black or Hispanic *and* from various SES groups. In addition, little research has been conducted with parents living in rural areas, who have been shown to exhibit more problematic parenting behaviors (e.g., less sensitivity) than their urban or suburban peers (e.g., inappropriate infant feeding practices, insecure attachments),^{174,175} with little known about the influence of parenting knowledge. Overall, as Bornstein notes, "additional research with more diverse samples, fathers, and other child caregivers is needed to determine the full scope of parenting knowledge surrounding young children."⁷⁶

Evidence to date is largely correlational and inconsistent, and has limited generalizability.

The literature on parenting knowledge is far from conclusive. Most research employs correlational, cross-sectional, or qualitative methods, which limits the strength and applicability of findings. For instance, much of the evidence on where parents obtain information is based on a parental self-report at one point in time. Studies of parents' actual utilization of sources of information on parenting and child development are scarce, and there is a lack of objective measures for how parents acquire information. Moreover, findings from studies in this area are inconsistent. For example, some researchers have found no association between maternal knowledge and parenting quality,⁸⁹ whereas others have found a strong relationship.⁷ Measures of parenting knowledge are created with white, middle-class samples of mothers, thus bringing into question how well they assess parenting knowledge among other groups of parents (e.g., black, Hispanic, or low-income parents, as well as fathers). More rigorous research is essential to establishing a strong evidence base that can inform policy and practice to promote parenting knowledge.

It is unclear to what extent parenting knowledge influences parenting practices. Parenting knowledge is necessary but not always sufficient to influence caregiving practices, but studies in this area are limited in both number and scope.⁷ For example, studies that have assessed the most “useful” sources of information to parents do not clarify whether access to such information translates to actual changes in parenting behavior. Given that sources of information and mechanisms for delivering it are ever evolving, ongoing research is needed to investigate the link between contemporary information-seeking behaviors and parenting practices.

SUMMARY OF FINDINGS

A comprehensive review of the literature on parenting knowledge revealed that research is limited on what parents know, what they want to know, where they get their information, which sources they trust, and how the answers to such questions differ among groups of parents. Numerous parenting interventions target knowledge as a means to improve parenting quality and child outcomes, yet the evidence base for this strategy is inadequate and insufficiently nuanced to fully inform policy and practice. Below, we highlight major findings, as well as gaps in the literature, followed by recommendations for research, policy, and practice.

- **Most parents lack the knowledge they need and want.** Research strongly suggests that parents want more information on parenting and child development than they receive—especially first-time parents. Although many parents believe that good parenting can be learned, they may not know who to turn to for advice. In addition, parents report that they lack access to high-quality information that clearly conveys what to expect of their infants and toddlers or how to parent them effectively, a relatively consistent finding across families from black, white, and Hispanic backgrounds.^{7,81,106} The current body of literature does not adequately address what parents want to know and lacks sufficient detail and rigor to draw firm conclusions on key facilitators and barriers to factors that might increase parents' knowledge in areas most critical to their children's development.^{7,81,98}
- **The amount of information available to parents is overwhelming and the quality is inconsistent.** Sifting through vast amounts of information on infant and toddler development

and childrearing strategies is a challenge for any parent, especially when there are conflicting messages and the quality of some sources is questionable. Service providers (e.g., doctors, home visitors, early care and education professionals) are well-positioned to work with families to increase parenting knowledge, yet they are often underutilized.^{98,177} Family and social support networks continue to be highly utilized sources of information on parenting and child development,⁸¹ but the quality of advice and support is inconsistent across families.¹²⁰

- **The sources of parenting and child development knowledge that parents use do not necessarily reflect their preferences for receiving information.**

Most parents want to know more about child development and effective parenting practices, but do not necessarily receive information from preferred sources. For example, studies suggest that certain groups of parents (e.g., white and Hispanic parents) would like to receive guidance during primary care visits, but get little relevant information during visits with their pediatricians.⁹⁷ New technologies, especially those that allow parents to access information at any time (e.g., internet, apps, text messages) are increasingly available and hold promise for widespread, inexpensive, and convenient access for parents.^{7,142} Few studies have been conducted to explore the usefulness of different technologies for conveying information on parenting and child development and for increasing their appeal among new parents.

- **Variability in parenting knowledge across groups of parents has not been well-**

examined. Several studies of white, middle-class mothers indicate meaningful differences in parenting knowledge, including their level of interest, what information they want, and what sources they find trustworthy (and why), but less research has examined these differences within samples of black and Hispanic mothers or across groups of mothers. In addition, there is a dearth of research on fathers. Extant research suggests that fathers are less confident about their knowledge compared to mothers and have a strong desire for more information.¹⁴⁰ This may reflect a lack of successful father engagement in services and interventions, but further exploration is needed. The sources that parents use to obtain information also appear to differ within various groups of parents, such as the “digital divide” between parents with high and low incomes (i.e., parents with fewer financial resources have less access to technology-based information from the internet, smartphones, and texts, likely due to disparities in access).^{107,125} As the internet has become more mainstream, however, research has not kept up with changes in patterns of use, and it is unclear if a true “divide” remains. There is also some evidence that the resources parents use vary by race and ethnicity,⁵¹ but the literature is not clear on the nature of these differences and the extent to which they may be conflated with poverty.^{1,87,176}

- **Little is known about what strategies are most likely to improve parenting knowledge.**

While rigorous evaluations of parenting interventions have shown program efficacy in increasing parenting knowledge,^{137,140,141} they identify neither which intervention strategies are most effective in this regard or the underlying processes that enable parents to act on new knowledge.^{7,150,178} Information that is clear, actionable, and derived from scientific study may be best for parents,¹⁶⁴⁻¹⁶⁸ but the current evidence base is insufficient to inform successful policies and practices that would enhance parents’ capacity to acquire and translate their

knowledge into practices that support the development of their infants and toddlers.

RECOMMENDATIONS

The following recommendations for research, practice, and policy are based on our review of the parenting knowledge literature:

- 1. Use more rigorous methods to study how parenting knowledge varies across groups of parents and how interventions can be tailored to their needs.** Successful efforts to increase parenting knowledge must identify and respond to the needs of increasingly racially, ethnically, geographically, and economically diverse U.S. families. This requires program leaders, practitioners, and policymakers to acquire a deep understanding of how parents' needs and preferences for information on parenting and child development may vary by race, ethnicity, gender, socioeconomic status, education, family structure, and other characteristics. Current research largely focuses on mothers and on western, white, middle-class parenting values and practices.⁷ As a result, the literature reflects an implicit bias toward parents with these characteristics. The small literature investigating differences among groups of families suggests that parents with different racial, ethnic, educational, and socioeconomic backgrounds have different needs and preferences,^{87,176,179} as do fathers.^{81,108,180} Additional research focused on clarifying such group differences among first-time parents with young children is essential to establishing evidence-based policies and practices that improve parenting knowledge and promote positive outcomes for infants and toddlers.
- 2. Increase engagement of parents in discussions on parenting and child development.** Pediatricians, early care and education professionals, home visitors, and other service providers are uniquely positioned to engage parents with in-depth discussions about parenting and early childhood development, and to provide relevant information and guidance. These conversations could also address how to best utilize natural supports, such as advice from friends and family members who are prepared to offer useful and accurate information. Additional efforts are needed to include fathers and primary members of parents' social support networks in these conversations so that all adults in children's lives can support parents and contribute to positive caregiving practices. Policies and programs that promote family engagement can help to enhance parents' knowledge. For instance, professional development opportunities can be implemented to improve service providers' capacity to engage families in discussions of parenting and child development in culturally responsive ways, so that services can be tailored to the individual needs of each family. In addition, health care policies can allow physicians and other service providers additional time for these important conversations.
- 3. Offer parents specific guidance on user-friendly sources that represent the best available evidence to date.** Research suggests that when parents receive information that is clear, actionable, and science-based, it is more effective.¹⁶³⁻¹⁶⁸ Studies also show that they prefer to obtain information on their own.¹²⁴ However, it is difficult for contemporary parents to navigate the myriad sources available to them. Specific guidance (in the form of a "toolkit" or "roadmap," for example) could help parents identify high-

quality, accessible sources of information, and verify the information they encounter. This is especially important for first-time parents, who may have limited experience seeking information about caring for their young children. Such tools could be developed and widely disseminated at a relatively low cost.

- 4. Investigate strategies from other fields of practice to identify optimal methods of dissemination.** Fields other than parenting and early childhood development may offer useful strategies for determining how to reach parents at the most critical points in time, in ways that they find most helpful, and using methods that are most likely to translate into high-quality parenting practices. For example, the effectiveness of strategies from behavioral science, marketing, and public health should be tested in relation to their capacity to improve parenting knowledge, and the findings used to inform more effective dissemination.^{181,182}

CONCLUSION

Becoming a parent for the first time is a major life transition, often accompanied by excitement, joy, stress, and uncertainty.^{183,184} Rapid developmental changes throughout infancy and toddlerhood test even the most capable parent's personal resources. And for families experiencing life adversities (e.g., poverty, mental health issues, conflict within intimate relationships, neighborhood violence), the additional stressors that come with parenting may be overwhelming.^{176,185} However, when mothers and fathers possess strong knowledge of parenting and child development, they are better equipped to care for their infants and toddlers and to help them thrive.^{1,2} Conversely, those with limited parenting knowledge are more likely to have unrealistic expectations of children and to engage in abusive and neglectful parenting behaviors.¹ The first years of a child's life are a time of great opportunity to promote healthy caregiving practices, when parents are especially eager to receive information and support^{16,17,166} and are amenable to intervention.⁴² Building a strong evidence base that both represents the full range of parents in the United States and lays the foundation for effective policies and interventions to improve parenting knowledge is a critical step that warrants our focused attention.

APPENDIX A

Method

We followed several procedures to ensure a high-quality review of the literature on parenting knowledge. First, we undertook a comprehensive search of peer-reviewed journals based on a wide range of key terms (see box below for key search terms). Search terms were sometimes combined to obtain specific information. We used the following search engines and research databases to identify articles, handbooks, book chapters, reports, and other sources of empirical published literature:

- Google Scholar
- EBSCOhost
- ERIC
- JSTOR
- MEDLINE
- Pediatric Care Online
- ProQuest
- PsycBOOKS
- PsycARTICLES
- PsychINFO
- PsychNET
- PubMed
- Sage Journals Online
- ScienceDirect
- SCOPUS
- Social Services Abstracts
- Springer Online Journal Archive

In addition, we reviewed gray literature primarily through Google searches, including government reports, unpublished reports and evaluations, materials from independent research organizations, and doctoral dissertations.

We focused our search using several parameters. Topics were related to

KEY SEARCH TERMS

- adult learning
- black parents
- culture
- early childhood social-emotional development
- early childhood physical development
- ethnicity
- Hispanic parents
- immigrant parents
- infant development
- knowledge of child development
- knowledge of parenting fathers
- fathers' knowledge of child development
- father's knowledge of parenting
- fatherhood
- fathers with young children
- fathers and parenting
- first-time parents
- maternal knowledge of child development
- maternal knowledge of parenting
- mothers with young children
- parenthood
- parenting knowledge
- parental knowledge
- parenting programs
- parents of young children
- parents of infants
- parents of toddlers
- parenting race and ethnicity
- parent education
- parenting and socioeconomic status
- parenting education
- parenting information sources
- race
- rural parents
- sources of information on child development
- sources of information on parenting
- transition to parenthood
- white parents

what parents know and want to know about parenting and child development, as well as where parents get their information, parenting practices and attitudes, first-time parenting, developmental milestones, and physical and socioemotional development in children under age three. We also identified literature on the above topics that focused on specific subpopulations (i.e., parents of different racial, cultural or socioeconomic backgrounds, fathers, and rural parents).

Initially, we limited our search to contemporary literature (within the last 10 years) highlighting research conducted in the United States. However, several topics had limited research available from that timeframe, so we expanded our search parameters to include older literature and seminal works. We collected and reviewed international research only when limited information was available that had been conducted in the United States.

In addition to searching databases, we referred to the reference section for each article to find additional articles. Furthermore, we used the “Cited By” feature in Google Scholar to find relevant articles that cited a seminal article to build a more robust collection of research. Seminal books and sources, such as Bornstein’s Handbook of Parenting, were particularly helpful in finding other research.

After collecting sources, Child Trends entered them into an Excel spreadsheet, organized them by content area, and developed summaries. In addition, we tracked all search terms, search engines and databases. In total, we reviewed 260 sources about parenting knowledge and peripheral topics. The research we collected spanned eight decades, but had a contemporary focus. Approximately 56 percent of the research was published in the past 10 years and approximately 73 percent was published within the past 15 years. The authors of the research we collected utilized various approaches including: quantitative (surveys, federal datasets), qualitative (focus groups, interviews) and mixed methods (questionnaires and home visits).

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