Parenting Measurement Tools and Frameworks: a Scoping Review

Full Report

January 2025

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Acknowledgements

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This document was developed by Public Health Ontario (PHO). PHO provides scientific and technical advice to Ontario's government, public health organizations and health care providers. PHO's work is guided by the current best available evidence at the time of publication.

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Background

Healthy child development is recognized as a key social determinant of health,[1] linking early life experiences to mental and physical health outcomes through the life course. Effective parenting practices have been linked to positive outcomes in cognitive, social, emotional, and physical development in children. Conversely, inadequate or suboptimal parenting can have detrimental effects in the short- and long-term. Understanding and assessing parenting is essential for identifying parenting strengths and challenges, areas that require improvement, and designing targeted interventions to support parents in providing safe, supportive, and nurturing environments for their children's healthy development.[2,3] In Ontario, public health units collect, analyze, and monitor relevant data to guide parent-directed programming while utilizing a comprehensive health promotion approach to support the health and well-being of infants and children.[3]

Positive parenting contributes to healthy child development by strengthening healthy attachment between parent and child, increasing positive child behaviours, reducing behavioural problems, and overall improving health outcomes for the child.[3] In this report, we will refer to "parent" and "parenting" to encompass the variety of people that care for young children, including parents, caregivers, family members, and other caring adults. Positive parenting can be defined as parental behaviour that is nurturing, empowering, non-violent and provides recognition and guidance to enable the full development of the child.[4] It has also been shown to provide a protective effect against childhood environmental risk factors such as lower socioeconomic status.[5] Harsh and inconsistent parenting practices are more likely to result in child behaviour problems and poor attachment, which increases the risk of developmental issues in childhood that have long-term impacts, including antisocial behaviour, conduct issues, emotional difficulties and poor self-control.[5,6] Harsh parenting, combined with other stressors, may also contribute to the development of toxic stress in childhood when the brain is rapidly developing, which increases the risk for poorer outcomes in the development of executive functioning, attention, processing speed, language, memory and social skills.[7,8]

The foundation of lifelong health begins as early as the prenatal period and into the first few years after birth.[8] The first six years of a child's life are of critical importance as the brain is rapidly growing and changing in response to the child's environment and relationships to the adults in their life.[9] If children are deprived of a nurturing relationship with their caregiver, or any of the other factors necessary for healthy development such as safe housing and communities or enriching experiences, there may be negative outcomes including suboptimal early childhood development and poor mental health.[9] Felitti et al.'s seminal research on adverse childhood experiences (ACEs),[10] which are potentially traumatic experiences occurring before 18 years of age including neglect, abuse or family dysfunction, showed that ACEs have significant impacts on physical and mental health across the lifespan.[11] More recently, positive childhood experiences (PCEs) have been recognized as foundations of health, shifting the primary early childhood focus from positive parenting to the broader concept of nurturing care.[8,12-15] Other principles of early childhood mental health include developing the capacity to form secure relationships with adults and peers, experiencing, managing and expressing a full range of emotions, and exploring the environment to learn in the context of family, community and culture.[9]

To promote the benefits of positive parenting and support families in high-stress conditions over the last two decades, many public health interventions and parenting programs have shifted from behaviour intervention models to a focus on infant-caregiver attachment and early relational health. In infancy, attachment to parents is based on a need for security and protection,[16] and develops as they respond in a warm and consistent way to emotional and physical needs of the child. Infant mental health models use the metaphor of "serve and return" to describe reciprocal exchanges between parent and child that form and strengthen neural connections in the brain responsible for the regulation of emotions and stress management.[17] As it relates to attachment theory; children with attentive parents who consistently respond to their needs are likely to form a secure attachment pattern that allows them to confidently explore their environment and receive comfort, while children with parents who are consistently unavailable or provide an unpredictable response to their needs are more likely to form insecure attachment patterns that influences the adoption of a fearful, deregulated behaviour pattern.[18] Healthy emotional and cognitive development is shaped by responsive, dependable interactions with adults, and a secure attachment pattern is correlated with numerous benefits to an individual's psychological well-being[18] including building resilience to buffer the negative effects of trauma and adversity.[14]

While risk factors for suboptimal development in childhood span across individual, family and community levels,[9] parenting outcomes include the development of behavioural traits, social and emotional regulation skills, capacity for developing and sustaining relationships, and long-term physical and mental health.[9,14,17] Given that these outcomes associated with parental skills can be modelled, taught, learned, practiced, reinforced and celebrated in children, it is essential that parents and families have access to services that encourage and support parenting skills in responsiveness, consistency, sensitivity and non-harsh discipline. As we continue to build an understanding of how brain and body systems, caregiving-behaviours, family interactions, and community environments are mutually influenced and reinforced during early development, there have been re-invigorated calls for improved cross-sector coordination, monitoring and evaluation and for global, national, and local level political commitment and investment in early childhood development.[18]

The 2015 United Nations Strategy for protecting and improving the health and well-being of women, children, and adolescents,[19] supported renewed attention on the activities, processes, and sustained resources for countries and other jurisdictions to engage in scaled up development of early childhood development and parenting policies and practices, with health care being identified as a critical starting point.[15,20] Early years leaders and champions across Canada and Ontario have advocated for and explored opportunities for collaboration across sectors of parenting support partners.

Despite the recognized importance of assessing and promoting positive parenting behaviours, there is a lack of standardized indicators to capture the multidimensional nature of parenting, the factors influencing early child development, and the ways in which public health units in Ontario engage parents. There are few evidence-based parenting frameworks to guide public health caregiver programming and currently Ontario has not developed nor identified one for adoption. Historical parenting frameworks fail to address the comprehensive range of factors that contribute to positive parenting outcomes, early childhood development outcomes, and the various health promotion activities public health units engage in. More recent frameworks exploring the concepts of early brain architecture, responsive interactions and toxic stress do not capture the growing evidence regarding the connection between the brain and the

rest of the body's systems, as well as the broader ecology of the child's developmental process. Neither do they identify the specific process indicators required for managing cross-sector scaling up and implementation of parenting/caregiving and other community programs.

The Nurturing Care Framework developed by the World Health Organization (WHO) is a roadmap to action for a whole government and societal response for the care of young children.[15] This framework focuses on governmental leadership and coordination of activities stating that "effective national programmes need strong political commitment, sustained by governments and driven by a determination to reduce inequities, poverty and social injustice".[15] It promotes five strategic actions to: lead and invest; focus on families and their communities; strengthen services; monitor progress; use data and innovate, and offers examples of population-based indicators supporting nurturing care activities.

With these recommendations in mind, Public Health Ontario (PHO) and the Ontario Parenting Community of Practice partnered to develop a robust and comprehensive parenting indicator framework that can guide provincial public health practice, research, policy development, and program implementation. Our framework will provide a common language and set of measures for assessment and surveillance of communities, evaluate parenting programs, identify areas of strength and improvement, and inform evidence-based interventions and policies. The development of a parenting indicator framework requires careful consideration of cultural, contextual, and demographic factors to ensure its applicability and usefulness across diverse populations. To support our efforts, we conducted a scoping review of peer-reviewed and grey literature with the research question: **What common concepts/elements exist across universal public health positive parenting frameworks/methods/resources/tools/policies for families with children 0-6 years of age?** and sought to review other evidenced-informed frameworks to guide our work.

Methods

This scoping review was planned by the Ontario Parenting Community of Practice via virtual meetings in the summer of 2023. Five public health units and PHO's Applied Public Health Science Specialist in Healthy Growth and Development formed a Parenting Indicator Working Group, which met during the fall of 2023 and winter of 2024 to conduct the scoping review and evidence synthesis. This scoping review is the first phase in the development and finalization of an evidence-informed indicator framework that can be used by Ontario Public Health Units.

The scoping review was conducted to answer our research question, following a Population, Concept, and Context (PCC) format. The *population* was parents, caregivers, or families of children <18 years. The *concepts* included 13 terms related to parenting listed and defined in Table 1, selected by the Parenting Indicator Working Group. The *context* was public health in jurisdictions similar to Ontario (Organization for Economic Co-operation and development (OECD) countries such as Canada, US, Australia, New Zealand, Western European countries etc.).

Thirteen Concepts Related to Parenting

1. **Attachment** is one specific and circumscribed aspect of the relationship between a child and caregiver that makes the child safe, secure and protected. The child uses the primary caregiver as a secure base from which to explore and, when necessary, as a haven of safety and a source of comfort.[21]

2. **Healthy parent-child** relationship describes the emotional bond formed between parent and child: connectedness, closeness, attachment, and security.[22] Loving, reliable and responsive relationships support children in learning how to think, understand, communicate, behave, express emotions and develop social skills.[23]

3. **Early relational health** describes the emotional connections between children and trusted adults that promote health and development, lead to positive experiences, and can buffer the negative effects of trauma and adversity.[14] Relationships should be:

   - **Safe:** The relationship is free of physical or psychological harm. *"Children believe their caregivers will protect them."*

   - **Stable:** The adult is dependably there for the child. *"Children believe their caregivers will meet their needs."*

   - **Nurturing:** The child's physical, emotional, and developmental needs are sensitively and consistently met. *"Children believe their caregivers will use warmth and clear expectations to foster their development"*[24]

4. **Parent-child interaction** refers to the quality of interactions between the parent and their child, including communicating, showing affection and providing social support.[25]

5. **Parenting skill development** is a term used to describe outcomes related to the parenting experience including parenting knowledge and skills, emotion-related parenting styles (e.g., emotion coaching or emotion dismissive),[26] child rearing, and parenting inconsistency.

6. **Social connection** is the size and diversity of your social network and roles, the functions these relationships serve, and their positive or negative qualities. Social connectedness is the degree to which you have the number, quality, and variety of relationships that you want. It is when you feel like you belong and have the support and care that you need.[27]

7. **Reducing adversity** was defined as any measurement of adversity, particularly focusing on the 10 traditional ACEs, defined by Felitti et al.[10]

8. **Responsive parenting/caregiving:** Incorporates anticipatory guidance for safety, education, and development, and the establishment of a caring and understanding relationship with one's child.[28]

9. **Parenting:** Interactions, behaviours, emotions, knowledge, beliefs, attitudes, and practices associated with the provision of nurturing care[28]

10. **Responsiveness:** The capacity of the caregiver to respond contingently and appropriately to the child's signals.[28]

11. **Sensitivity:** awareness of the needs and emotions of others.[29]

12. **Child rearing** is the process of supporting the physical, emotional, social, and intellectual development of a child from infancy to adulthood.[30]

13. **Parent mental health:** Symptoms of depression, anxiety, worry, poor perceived life quality, post-traumatic stress disorder, or stress.[28]

PHO Library Services developed and performed the search strategy in five databases: MEDLINE, EMBASE, CINAHL, Web of Science, and SocIndex. All search results were uploaded to Covidence™, an online systematic review production tool, and duplicates were removed. Titles and abstracts were screened by a team of five staff from local public health units and lead author from PHO. Each record was screened in duplicate at each phase of screening (see Figure 1).

Papers were included if they were published in the last 10 years, in English. Study designs included review-level and primary studies, which described frameworks, tools, policies, resources, measurement tools, or reliability and validity of a tool. Exclusion criteria were non-English studies, studies from non-OECD countries, population studies of adolescent families or adults without children, specific clinical populations (e.g., children with autism or cystic fibrosis), there was no reference to parenting or any concept mentioned above, and if the study occurred in an acute health care setting or school setting. Further details on our search strategy can be provided upon request.

Due to the high volume of papers retrieved in this search, during title and abstract screening the Parenting Indicator Working Group limited the age of children to 0-6 years and excluded studies focused on adolescents, or those conducted in a school setting.

Figure 1: PRISMA
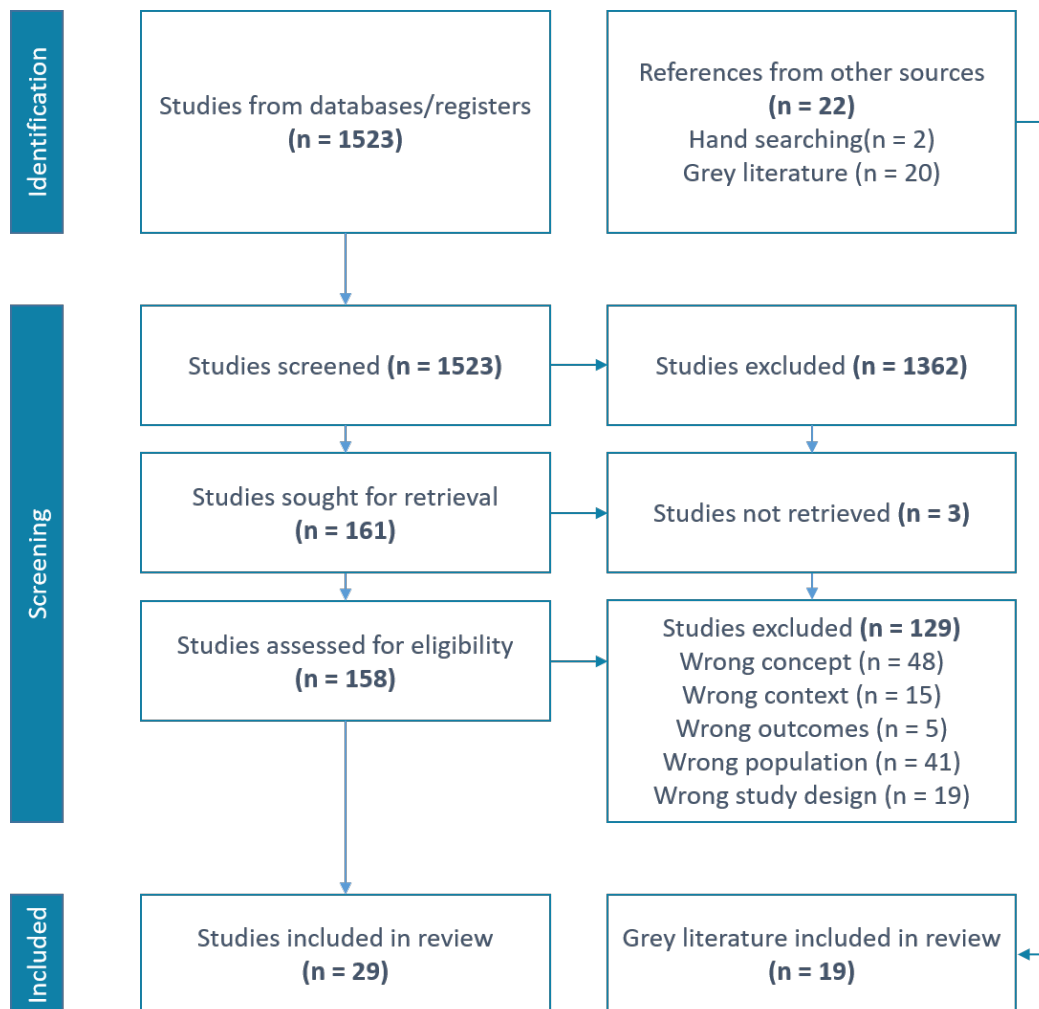
Main Findings

Twenty-nine (29) studies from the peer-reviewed literature and 17 records from the grey literature were identified. An additional two grey literature records were identified through hand searching. A summary of included papers can be found in Appendix A.

From the peer-reviewed literature, 13 studies were from the United States, five from Europe (Spain, Italy, Germany, Sweden), four from Australia, three from Canada, two from the United Kingdom and two studies included populations from multiple countries. Study designs included systematic or narrative review and qualitative studies (N=6 each), randomized controls trials (n=5), non-or quasi-experimental trials (N=4), pilot or pre/post intervention studies (N=3), and the remaining studies were cohort or mixed methods studies. One study tested the reliability and validity of a parenting measurement tool.

From the grey literature, eight records were from the United States, five from Canada, three published by the WHO, and one each from Australia, New Zealand, and Spain. These included four frameworks, three reports, two peer-reviewed papers, two book chapters, and one each of: guideline, briefing note, guide, program, plan, strategic plan, strategy, infographic.

Parenting concepts, frameworks, measurement tools and indicators were extracted from the included literature. These are presented in the following sections.

Parenting Concepts

Each of the included peer-reviewed studies and grey-literature discussed the 13 a priori parenting concepts. Figure 2 presents the number of studies which included each concept. Note that several studies discussed multiple concepts.

Figure 2: Number of Peer Reviewed and Grey Literature Which Discussed an *a priori* Parenting Concept
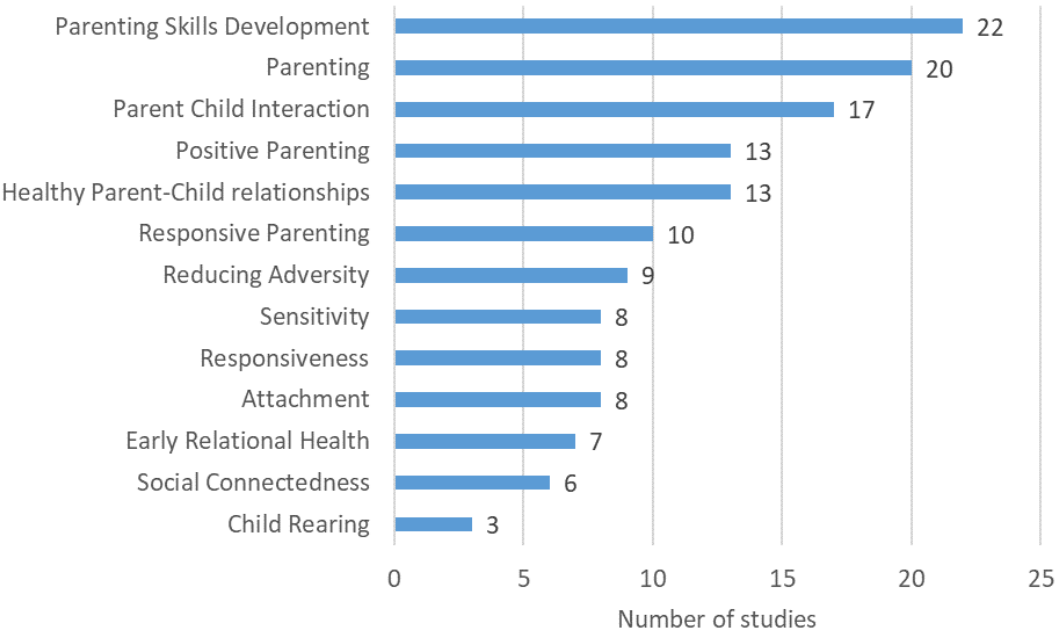
In addition to the 13 *a priori* concepts which guided this scoping review, an additional 57 concepts were identified. These concepts were grouped into seven domains and 30 sub-domains and can be found in Table 2.

Frameworks

Nine frameworks were identified in the peer-reviewed literature: Parental Acceptance-Rejection Theory (PART),[31] Raising an Emotionally Intelligent Child framework,[32] Transition to maternal role framework, "Positive Deviance" Approach,[33] The Empower Action Model,[34] An integrated child maltreatment prevention system,[35] Integrated Conceptual Framework (Early Relational Health and Child Development),[36] Model of Family-Based Resilience,[37] and the Strengthening Families Framework.[38]

Measurement Tools

Eighty-eight (88) parenting measurement tools were extracted from the peer-reviewed and grey literature. Table 2 displays measurement tools by domain/subdomain. Full lists of tools by domain are available in Appendix B and Appendix C.

Measurement tools and indicators are presented by domain and subdomain are summarized in Table 2.

Indicators

Extracted indicators were categorized by domain and subdomain. Each domain is explored in the following sections.

Table 2: Measurement Tools and Indicators Identified in Review by Domain and Subdomain

Domain	Subdomain	Measurement Tools and Indicators
Parent Mental health	General mental health	Self-rated mental health
		Depression Anxiety Stress Scale (DAS)[39]
	Perinatal mental health (PMD)	Score on Edinburg Postnatal Depression Scale (EPDS)[40]
		History of PMD
	Parental Stress (Reducing Sources of Stress)	Parenting Stress Index[41]

Domain	Subdomain	Measurement Tools and Indicators
Child outcomes	Child health and development	KIDSCREEN Child health and Development questionnaire[42]
Child outcomes	Child mental health	Parent-perceived mental health status
Child outcomes	Child mental health	Parent-reported health care professional diagnosed ASD, ADHD, anxiety, mood disorders
Child outcomes	Child behaviour (Internalizing and externalizing, social/emotional)	Strengths and Difficulties Questionnaire (SDQ)[43]
Child outcomes	Child behaviour (Internalizing and externalizing, social/emotional)	Child Behavior Checklist (CBCL)[44]
Child outcomes	Child behaviour (Internalizing and externalizing, social/emotional)	The Brief Infant Toddler Social Emotional Assessment (BITSEA)[45]
Child outcomes	Child behaviour (Internalizing and externalizing, social/emotional)	Coping with Toddlers Negative Emotions Scale (CTNES)[46]
Child outcomes	Temperament	Toddler Temperament Scale (TTS)[47]
Child outcomes	Temperament	Devereux Early Childhood Assessment (DECA)[48]
Child outcomes	Temperament	ECBI[49]
Healthy Relationships	Parent conflict	Abbreviated Dyadic Adjustment Scale (ADAS)[50] Parent Problem Checklist (PPC)[51] Communication Patterns Questionnaire[52]

Domain	Subdomain	Measurement Tools and Indicators
	Supportive relationships	Perceived social support
	Harmful or violent relationships	Police-reported family disputes Police-reported intimate partner violence
Parent-child Interaction	Parent-child interaction	Parent-child interaction cumulative score[53] 5 individual indicators (NLSCY)[53] Parent Child Interaction Scale[54]
	Attachment	Parent Bonding Questionnaire Maternal postnatal attachment scale (MPAS)[55] subscales = quality of attachment, pleasure in interaction, absence of hostility
	Early Relational Health	Early Relational Health Screen (ERHS)[56]
	Responsiveness	Parental Responsiveness Rating Scale (PaRRiS)[57] Nijmegen Parenting Questionnaire[58]
Parenting (positive parenting)	Parenting self-efficacy	Parent Efficacy Scale[59]
		Tool to measure parenting self-efficacy (TOPSE)[60]
	Sense of competence	Parenting Sense of Competence Scale (PSOC)[61]
	Satisfaction	Life Satisfaction Scale (LSS)[62]
	Positive parenting	Positive Parenting Questionnaire (PPQ)[63]

Domain	Subdomain	Measurement Tools and Indicators
	Parenting	Parenting Scale[63]
	Parenting self-regulation	Me as a Parent Scale[64]
	Parenting Resilience	
Parenting Skill Development/Core Life skills	Inconsistency	Parenting Dimensions Inventory[65]
	Parent Emotional Socialization	Parent Emotional Style Questionnaire (PESQ)[66] Emotion-Related Parenting Styles Self-Test (ERPS-ST)[67]
	Parenting knowledge, attitudes and beliefs	Upstart Parent Survey[68]
	Child rearing	How I Deal with Problems Regarding Care of My Baby (PPS) scale[69]
	Reducing Adversity	ACEs questionnaire Helpline callers with consultations on child sexual abuse[70]
Environment/ Community	Family environment	Home Situation Questionnaire (HSQ)[71]
		Family Adversity Index[72]
	Community/ neighbourhood	Receiving help from neighbors[70] Greater engagement in neighborly activities[70] Perception of child household safety[70]
	Sense of community belonging	% of population who reported a "very strong" or "somewhat

Domain	Subdomain	Measurement Tools and Indicators
		strong" sense of community belonging[27]
	Social Connectedness/ Support	Social Support Measure[73]
		Duke-UNC Functional Social Support Questionnaire[74]
		MOS Social Support Survey[75]

Parent Mental Health

Parent mental health is comprised of three subdomains: general parent mental health (including parental self-regulation and parental emotion regulation), perinatal mental health, and parental stress. This domain was mentioned in 12 studies.

Seven studies[33,63,76-80] discussed general parent mental health. One framework was related to this domain:

Positive Deviance Approach.[33] The framework "focuses on collaborating with communities at risk for engaging in high-risk behaviors to identify community norms regarding a specific health outcome and determine the few individuals who, despite their own history and setbacks, are practicing strategies that promote their own well-being."[81] A main component of the framework is self-care and addressing mental health needs.[33]

The subdomain of general parent mental health was also identified in two grey literature records. Crandal et al. presents a conceptual framework on the intersection of maternal emotion and cognitive control capacities and parenting based on a review of literature.[82] The framework is entitled *Conceptual model of the multigenerational impact of maternal emotion and cognitive control capacity and parenting*. Crandal et al. also referred to three tools to measure parental emotion regulation: Emotion Regulation Questionnaire, Parental Emotion Regulation Inventory, and Difficulties in Emotion Regulation Scale. The second record, Parenting Under Pressure,[83] focuses on the parenting needs of high-risk families (i.e., involved with child protection services). This program identified parent mental health as a key concept, however did not provide a specific measurement tool.

Four studies,[19,77,78,80] examined parental stress and cited three measurement tools: the Perceived Stress Scale,[84] the UpStart Parent Survey,[68] and two studies used the Parenting Stress Index.[85] One study,[78] which measured perinatal mental health, cited The Edinburg Postnatal Depression Scale (EPDS).[40]

Child Outcomes

Seven studies[24,26,29,63,76,77,86] discussed child outcomes, specifically child health and well-being, child mental health, child behaviours (including internalizing and externalizing and social/emotional

behaviours), and temperament. The Brief Infant-Toddler Social and Emotional Assessment,[45] the Problem Checklist Subscales,[87] and the Eyberg Child Behaviour Inventory,[49] were each reported by two studies.

Healthy Relationships

The domain of healthy relationships was mentioned in five of the included studies.[19,23,24,32,63] It includes the three subdomains: parental conflict, supportive relationships and harmful or violent relationships.

Parental conflict was referenced in four studies,[19,24,63,131] and has three associated indicators: couple satisfaction and conflict, marital agreement, and co-parenting. Parental conflict was specifically addressed in one systematic review.[24] Couple satisfaction and conflict was measured in one randomized control trial study using the Abbreviated Dyadic Adjustment Scale (ADAS), the Parent Problem Checklist (PPC), and the Communication Patterns Questionnaire.[63] Marital agreement was cited in one systematic review.[19] Co-parenting was addressed in one qualitative study.[23]

The subdomain of supportive relationships was identified in two studies.[19,32] In one systematic review, perceived social support was measured by the Duke-UNC Functional Social Support Questionnaire.[19] The Transition to Maternal Role Framework, as well as the Social Support Measure, was cited by one pilot study.[32] This subdomain has overlap with the concepts of Social Connectedness and Environment/Community.

Four grey literature records examined the domain of healthy relationships.[15,25,27,28] Publications from the WHO[28] and the WHO Nurturing Care Framework[15] addressed the overall concept of Healthy Relationships. Two records related specifically to the subdomain harmful or violent relationships: Maryland Governor's Family Violence Council Strategic Plan,[25] and Peel's Community Safety and Wellbeing Plan.[27]

Parent-child Interaction

This domain was the most frequently mentioned in the studies included in this literature review (n=19).[19,29-31,33,36-38,58,63,65,76,77,79,80,88-91] Within this domain there were 4 subdomains including parent- child interaction, attachment, early relational health, and responsiveness. This domain is closely linked to other parenting domains including parenting and parent mental health.

Most of the included studies evaluated public health strategies such as parenting programs and interventions. Five frameworks,[31,33,36-38] and six measurement tools were cited: questions from the Parent Child Interaction module of the Canadian Health Survey on Children and Youth (PCI-CHSCY),[cited in53] Parent Child Interaction Scale,[54] Maternal Postnatal Attachment Scale,[55] Early Relational Health Screen[56] and the Parental Responsiveness Rating Scale (PaRRIS)[57].

Frameworks cited in the included literature include:

- Parental acceptance-rejection theory: raising an emotionally intelligent child framework.[31]

- Positive deviance approach.[33] This framework applies a social and behavioral change approach to investigate the characteristics and behaviors of individuals from resource poor communities that

respond in a positive, resilient, and prosocial way to stressful life situations compared to their peers.[81]

- Integrated Conceptual Framework.[36] This transactional/ecological, developmental systems framework conceptualizes early relational health and child development and health outcomes.

- 3S Model of Family-Based Resilience.[37] This framework illustrates how the resilience dimensions of sensitivity, stimulation, and stability moderate the association between general psychosocial risk and early-life adversity (ELA) exposure on developmental outcomes.

- Strengthening Families Framework.[38] This framework operationalizes social determinants of health by connecting families to concrete supports as a primary prevention approach to child welfare.

Concepts including Parent-Child Interaction, Early Relational Health, and Responsive Relationships were mentioned in many of the references from the grey literature and are described in the domain on Parenting.

The subdomain of Parent-Child interaction was referenced in 13 studies.[19,26,33,63,76,79 30,36,38,58,77,88,89] Two measurement tools were cited: Parent-Child Interaction Scale (PCIS),[19] and 5 parent-child interaction questions (PCI_Q005, PCDI_Q010, PCI_Q015, PCI_Q020, PCI_Q025) from the Canadian Health Survey on Children and Youth.[cited in 53] Study designs included one systematic review, four randomized control trials (RCTs), two pseudo/quasi RCTs, two mixed methods, two qualitative, one test and opinion, and one pilot trial with a pre and post measure.

The subdomain of attachment was referenced three studies.[65,77,80] One measurement tool was cited: the Maternal Postnatal Attachment Scale (MPAS); subscales = quality of attachment, pleasure in interaction, absence of hostility.[55] Study designs included one randomized control trial (RCT), one cohort study and one diagnostic test accuracy study.

As with the subdomain of attachment, the subdomain of early relational health was also referenced in three studies.[38,65,77] Early Relational Health Screen (ERHS) is an indicator that measures specifically this domain.[65] Study designs included one RCT, one Cohort study and one Qualitative research study. The subdomain of Responsiveness was referenced in 12 studies,[29-31,36,37,63,65,77,79,80,91,92] and can be measured using the Parental Responsiveness Rating Scale (PaRRIS).[58]

Positive Parenting

The domain of parenting is a broad and frequently discussed concept in the literature. As a general term, parenting describes all types of parenting behaviours and perspectives. In this scoping review, the overall concept of parenting was found in 16 peer reviewed studies.[24,26,29,32-36,59,63,66,76,78,86,89,90]

Only three studies mentioned a measurement tool specific to this broad domain.[63,70,77] The Parenting Scale (PS)[95] focuses on dysfunctional parenting. The four subdomains of positive parenting: parenting self-efficacy, parenting sense of competence, and parenting satisfaction added a few more studies for a total of 19 peer reviewed parenting related articles.[19,24,26,29,31-36,59,63,66,76,78,86,89-90]

The majority of studies investigated the impact of community-based parenting interventions, with a few offering discussions of strategies, models, or frameworks to encourage the development of system-wide approaches to supporting parents and/or young children.

The domain of parenting was also mentioned in seven grey literature records.[2,27,28,82,86,95,96] Frameworks and models from the WHO, Ontario public health units, University settings (Harvard and Western Ontario), and international governments offer summary information and recommendations to support develop or enhance current policies, programming, funding, and research to improve population child health outcomes. A book chapter and a peer reviewed article (found in a hand-search) offered similar information and guidance for parenting interventions as found in the peer reviewed literature search.

Cited frameworks include:

- WHO, Nurturing Care Framework. This internationally recognized framework offers parenting specific indicators.[15]

- Wellington-Dufferin-Guelph Public Health, Positive Parenting Framework.[95] This framework is designed to anchor parenting programs and resource related decision making.

- Peel Region Public Health, Peel's Community Safety and Well-being Plan (2020-2024).[27] This plan is a broader roadmap for cross sector collaboration towards a safer, more inclusive and connected community.

One best practice guide was identified: the Government of Spain's Best Practice Guide for Positive Parenting includes a protocol to support practitioners working with families to assess professional skills, knowledge, and application of the provincial parenting framework.[86]

The subdomain of positive parenting was identified in 11 studies,[19,24,29,31,33,36,59,63,76,88,89] with one study using the Positive Parenting Questionnaire (PPQ).[63] Study designs included two RCTs, two pseudo- or quasi- randomized RCTs, one systematic review, two experimental studies, and two qualitative research articles. Most of these studies investigated the effectiveness and/or impact of preventative, community-based parenting interventions such as Triple P,[97] Centering Parenting,[98] Legacy for Children,[99] and Sit Down and Play[100] on parents' ability to engage in positive parenting behaviours. Such positive parenting interventions strongly overlap with other subdomains within the domain of parenting and with other domains identified in this literature review such as the domains of healthy relationships and parent-child interaction/ relationships. The positive parenting domain was also identified in two grey literature records, one published by an Ontario public health unit,[95] and another by the Government of Spain.[86]

Nine studies included the subdomain of parenting self-efficacy or a parent's belief in their personal capacity to successfully engage in parenting practices.[19,24,29,63,76,78,88,89] Studies related to this sub-domain identified the following widely recognized measures: Tool to measure Parenting Self-Efficacy (TOPSE),[60] Self Efficacy for Parenting Task Index,[101] and the Satisfaction subscale of the Maternal postnatal attachment scale (MPAS).[102] A Swedish study developed 9 subscales adapted from TOPSE to create the Swedish language Parental Self-Efficacy Scale (PSE).[103] A German study adapted self-efficacy related questionnaires including the Parenting Sense of Competence Scale and Self-Efficacy for Parenting Task

Index to develop the German language Self Efficacy Scale (SEFS).[63] Parenting self-efficacy was not identified as a theme in the collected grey literature records.

The subdomain of parenting sense of competence was identified in four studies.[32,63,66,76] One study referenced the Problem Setting and Behaviour Checklist (PSBC), one study referenced How I Deal with Problems Regarding Care of My Baby Scale (PPS),[69] and all four studies referenced the Parenting Sense of Competence Scale (PSOC).[104] Parenting sense of competence was not identified as a theme in the collected grey literature records.

The subdomain of parenting satisfaction was identified in five studies.[19,24,32,63,88] Three studies referenced unique measurement tools; Life Satisfaction Scale (LSS),[63] Maternal Postnatal Attachment Scale's (MPAS) (Satisfaction Subscale),[102] and What Being the Parent of a Baby is Like-Revised (WPBL-R) scale.[105] Parenting satisfaction was not identified as a theme in the included grey literature records.

Parenting Skill Development

This was the domain most identified in the review, with 19 studies addressing parenting skill development outcomes.[19,23,24,26,29,32,33,36,38,59,63,70,78,79,88-91,93] This is likely due to the concept being used to describe a number of subdomains that have been further investigated separately in this review. For example, the Upstart Parent Survey was the standardized tool used to measure outcomes related to the parenting experience including parenting knowledge and skills, parental competence, emotional health, parenting stress, and formal/informal support systems.[78] The other measures that were captured exclusively by this concept were related to emotion-related parenting styles (e.g., emotion coaching or emotion dismissive),[26] child rearing, and an indicator of inconsistency. Literature referring to parenting styles (such as authoritarian, authoritative, permissive, and uninvolved) was not identified in this search.

Five studies addressed reducing adversity, a subdomain specific to adverse childhood experiences or child maltreatment of either the child or the parent. Five studies referred to reducing adversity, meaning that the authors explicitly described reducing ACEs as an outcome.[34,35,66,80,86] Four studies were conducted in the U.S.,[34,66,80,86] and one was conducted in multiple countries including Australia, New Zealand, the UK and US.[35] Malvaso et al. proposed an integrated framework with indicator domains that could be considered for a prevention-oriented and system-wide approach to child maltreatment.[35]

Environment and Community

Twelve (12) studies identified concepts and measurement tools that addressed aspects of parenting considered environmental or community-based. Four studies[32,38,78,86] included the concept of social support and connectedness. Social support can be defined as "the actual receipt of resources and assistance from members of a larger social network",[32] but may also include emotional support from a caring partner or information support which is content that may help the parent cope with problems as they arise. This review identified two studies that used measurement tools including the Social Support Measure[32] and the Duke-UNC Functional Social Support Questionnaire[19] MOS Social Support Survey.[75,78] The frameworks that included this concept were the Strengthening Families Framework.[38]

Only one study reported on programmatic indicators for community and public health services related to preventing child maltreatment.[86] The three indicators included: number of educational workshops provided, number of individuals training in a child abuse prevention program, and number of participants in a train the trainer model. This study also focused on identifying major intervention components of community-based interventions that contributed to lowering child maltreatment rates including 1) the involvement of community members, 2) partnerships with community institutions, 3) multidisciplinary collaboration, and 4) responsiveness to the needs of communities.

Discussion

This scoping review found 88 measurement tools and nine frameworks identified from 29 peer-reviewed studies and 19 grey literature records. These were categorized into five domains: parent mental health, child outcomes, healthy relationships, parent-child interaction, and environment. These domains were further stratified into 30 subdomains and the measurement tools and frameworks were categorized into these domains.

There was variation in the terminology used to describe similar concepts, and changes in terminology in studies and records published more recently. Many studies used multiple tools to measure parenting across multiple domains. This review did not identify many programmatic indicators that Ontario public health units could use to measure intermediate outcomes of the type of public health activities to support optimal parenting practices in local communities.

This review aimed to identify parenting indicators, measurement tools and frameworks at three levels of public health practice: 1) population assessment and surveillance, 2) programmatic indicators, and 3) evaluation of parenting programs or interventions. Based on our findings in the peer-reviewed literature, we primarily found parenting measurement tools that would be used to evaluate parenting programs in RCTs or quasi-experimental studies. The grey literature provided a few more population assessment and surveillance measures, for example, "parent-child interaction" or "sense of community belonging." These indicators were reported in documents published from a few of Ontario's local public health units. Only one peer-reviewed study reported on effective indicators of community-based interventions to prevent child maltreatment.

Parenting is a multifaceted topic that encompasses several components such as parental well-being, partner relationship satisfaction, adjustment, and social support. To ensure that the to-be-developed public health indicator framework would be comprehensive, this review included both peer-reviewed and grey literature frameworks as well as measurement tools that would include many of these parenting outcomes. As such, the study team used a research question that was broad, only specifying population, concepts, and context. One challenge with this approach was the overlapping and variable terminology of concepts related to parenting. For example, one systematic review labeled a concept as supportive parenting measured using the Parenting Dimension Inventory, however in the actual study the authors used the specific indicator of parenting inconsistency,[106] asking parents questions such as "I only threaten with punishment when I'm sure I'll be able to execute the punishment", rated on a 6-point scale. In this review older studies did not appear to use the terms early relational health within the concept of parent-child interaction.

Implications for Practice

This review provides an initial summary of the available tools and measures to support organizations in surveillance and data collection regarding parenting within their community. However, there was a paucity of relevant indicators specific to public health assessment and surveillance. This is a major gap for public health practice. Population-level data for communities is essential to inform the programs and

policies to address the needs of the community. Parenting and early relational health are foundational to optimal growth and development therefore it is critical that public health has methods to measure these concepts in their local communities. The next phase of this work will involve developing an expert consensus with public health practitioners on relevant program indicators and prioritize the subdomains, indicators and tools identified in this review.

Strengths

Five public health units that are members of PHO's Parenting Community of Practice participated in the scoping review. This ensured that the scoping review would meet the needs of public health units working in the area of early years health. Two independent reviewers were able to screen 100% of the initial titles and abstracts as well as full texts. All discrepancies were discussed with the project team to achieve consensus. This was an extensive review of both peer-reviewed and grey literature that focused on indicators and/or tools for three different purposes: population-level, programmatic indicators, and evaluation of parenting programs.

Limitations

There were several limitations to this review as well as the individual included studies. Firstly, a focus on the general population may have resulted in the exclusion of specific populations. Cultural variations of parenting norms exist and how this would impact indicators and evaluation tools was not explored within this review. Although several of the included studies had diverse populations participating in their parenting programs, cultural appropriateness of the program or indicators were not examined. This is an area for further review to explore cultural differences in parenting and culturally appropriate indictors and measurement tools. Studies were also excluded if children were diagnosed with neurological, behavioral and/or physical health conditions. All the parenting outcome measurement tools in this review rely on self-report measure. Several studies noted this is as a limitation given that results are stronger when both self-report and observational methods can be utilized in combination for the generalization of parenting skills and to reduce sources of bias. However, as the primary objective of this review is to determine what measures and indicators can be used to evaluate positive parenting at a population level, self-reported methods are the most appropriate. Many of the parenting domains and concepts identified in this review were not clearly defined in the literature or used variable terminology to define similar concepts. This was a challenge for the synthesis of this review and mapping appropriate indicators to concepts. Finally, included studies were limited to English language and to studies conducted in the last 10 years.

Some limitations of the included studies included very small sample sizes, most studies were examining program evaluation outcomes, there were very few public health service/activity related indicators, measures were mostly parent self-report, and none of the included literature reported on indicators that were representative of a population. Finally, no framework was found in peer-review that aligned with the need of public health practice in parenting.

Conclusion

This review identified nine frameworks and 88 measurement tools across many concepts in parenting including, parent mental health, child outcomes, healthy relationships, parent-child interaction, positive parenting, parenting skill development, and environment and community. No one framework captured the breadth and scope of public health practice in parenting and healthy child development, and very few public health program indicators were identified. This scoping review provides a solid foundation of key concepts and measurement tool options that will help to inform next steps in developing a comprehensive parenting measurement framework to guide local public health units in Ontario. Future work will include prioritizing subdomains and indicators that are most relevant, feasible to collect, and actionable for public health.

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Appendix A: Summary of Included Peer-Reviewed Studies

Table A1: Summary of included Peer-Reviewed Studies

Author/Date	Title	Study Design	Country
Bertoni 2017[23]	A qualitative evaluation of a preventive intervention for parents: The Groups for Family Enrichment_Parent version (GFE_P).	Qualitative research	Italy
Brown 2018[32]	Social Support, Parenting Competence, and Parenting Satisfaction Among Adolescent, African American, Mothers	Secondary analysis	United States
Dishion 2015[30]	A transactional approach to preventing early childhood neglect: The Family Check-Up as a public health strategy	Randomised controlled trial	United States
Enebrink 2015[76]	ABC for parents: Pilot study of a universal 4-session program shows increased parenting skills, self-efficacy and child well-being	Pilot study	Sweden
Fleckman 2018[33]	Breaking the mold: Socio-ecologic factors to influence the development of non-harsh parenting strategies to reduce risk for child physical abuse	Qualitative research	United States
Gross 2021[36]	Integrating Health Care Strategies to Prevent Poverty-Related Disparities in Development and Growth: Addressing Core Outcomes of Early Childhood	Text and opinion	United States
Havighurst 2022[77]	A randomized controlled trial of an emotion socialization parenting program and its impact on parenting, children's behavior and parent and child stress cortisol: Tuning in to Toddlers.	Randomised controlled trial	Australia
Heinrichs 2014[63]	Four-year follow-up of a randomized controlled trial of triple p group for parent and child outcomes.	Randomised controlled trial	Germany

Author/Date	Title	Study Design	Country
Johnston 2017[78]	Piloting Centering Parenting in Two Alberta Public Health Well-Child Clinics	Non-randomised experimental study	Canada
Jose 2019[79]	Tasmania's child and family centres building parenting capability: A mixed methods study	Mixed methods study	Australia
Kaminski 2013[29]	Behavioral and Socioemotional Outcomes Through Age 5 Years of the Legacy for Children Public Health Approach to Improving Developmental Outcomes Among Children Born Into Poverty	Randomised controlled trial	United States
Kim 2017[31]	Integrating Faith-based and Community-based Participatory Research Approaches to Adapt the Korean Parent Training Program.	Qualitative research	United States
Levickis 2020[58]	Training community health nurses to measure parent-child interaction: A mixed-methods study	Mixed-methods	UK
Lo 2021[70]	Community-Based Interventions to Reduce Child Maltreatment	Systematic review	United States
Malvaso 2020[35]	A public health approach to preventing child maltreatment: An intelligent information infrastructure to help us know what works.	Non-systematic narrative review	Australia, New Zealand, the United Kingdom and the United States
Martini 2022[37]	Toward a dimensional model of family-based resilience: Sensitivity, stimulation, and stability as moderators of early-life adversity	Narrative review	Canada
Noël 2023[38]	DULCE: Addressing Social Determinants of Health by Connecting Families to Concrete Supports as a Primary Prevention Approach to Child Welfare	Qualitative research	United States

Author/Date	Title	Study Design	Country
O'Neill 2018[88]	'Make the Connection' parenting skills programme: a controlled trial of associated improvement in maternal attitudes.	Pseudo-randomised waitlist control design	Canada
Porzig-Drummond 2014[90]	The 1-2-3 Magic parenting program and its effect on child problem behaviors and dysfunctional parenting: A randomized controlled trial.	Randomised controlled trial	Australia
Porzig-Drummond 2016[26]	A Preliminary Evaluation of the 1-2-3-Magic Parenting Program in an Australian Community Services Setting	Pre-post study	Australia
Rosenblum 2022[65]	In-the-moment ratings on the Early Relational Health Screen: A pilot study of application in home visiting and primary care.	Diagnostic test accuracy study	United States
Ruiz-Zaldibar 2018[19]	Parental competence programs to promote positive parenting and healthy lifestyles in children: a systematic review	Systematic review	Spain
Ruiz-Zaldibar 2021[59]	Parental Self-Efficacy to Promote Children's Healthy Lifestyles: A Pilot and Feasibility Study.	Pilot and feasibility study	Spain
Sanders 2014[24]	The Triple P-Positive Parenting Program: a systematic review and meta-analysis of a multi-level system of parenting support	Systematic review	International
Shah 2019[89]	Encouraging Parenting Behaviors That Promote Early Childhood Development Among Caregivers From Low-Income Urban Communities: A Randomized Static Group Comparison Trial of a Primary Care-Based Parenting Program	Prospective quasi-randomized Static group comparison study	United States
Sharma 2022[80]	Evaluation of a Mother-Infant Dyadic Video-Feedback Intervention in a Community Health Center in South Bronx, New York City	Cohort study	United States

Author/Date	Title	Study Design	Country
Srivastav 2020[34]	The empower action model: A framework for preventing adverse childhood experiences by promoting health, equity, and well-being across the life span	Framework	United States
Stone 2017[91]	Parents' perspectives of a universal early attachment programme in Scotland.	Qualitative research	United Kingdom
Strickland 2013[66]	Parental competence and maltreatment: the curvilinear influence of plan complexity.	Cohort study	United States

Appendix B: Summary of Included Grey Literature Records

Author/Organization	Title	Country
Centre on the Developing Child Harvard University[107]	3 Principles to Improve Outcomes for Children and Families 2021 Update	United States
Crandall, Deater-Deckard & Riley, 2015[82]	Maternal emotion and cognitive control capacities and parenting: A conceptual framework	United States
Dumitriu et al., 2023[108]	Advancing early relational health: a collaborative exploration of a research agenda	United States
Government of Maryland[25]	Maryland Governor's Family Violence Council Strategic Plan	United States
Government of Spain[86]	Best practice guide for positive parenting: a resource for practitioners working with families	Spain
Griffith University[83]	The Parents Under Pressure Program: supporting complex families, improving outcomes for children	Australia
Middlesex-London Health Unit[109]	Measuring Positive Parenting Using the RRFSS: final report of the perinatal and Child Health Survey Initiative	Canada
Gasden V, Ford M, Breiner H, editors[110]	Chapter 6: Elements of effective parenting programs and strategies for increasing program participation and retention	United States
Gasden V, Ford M, Breiner H, editors[111]	Chapter 7: Towards a national framework.	United States
Oranga Tamariki Ministry for Children[112]	Caregiver and adoption assessment framework	New Zealand

Author/Organization	Title	Country
Peel Region[27]	Peel's Community Safety and Well-being Plan 2022-2024	Canada
Simcoe Muskoka District Health Unit, Mental Health Strategy Working Group[113]	Simcoe Muskoka Mental Health Promotion Strategy	Canada
Li & Ramirez [114]	Early Relational Health: a review of research, principles, and perspectives	United States
Walker & Kirby, 2009[115]	Conceptual and measurement Issues in Early Parenting Practices Research: An Epidemiologic Perspective	United States
Positive Parenting Framework Working Gropu.[95]	Wellington-Dufferin-Guelph Public Health positive parenting framework	Canada
Western University Centre for Research and Education on Violence against Women and Children[116]	7 Protective Factors that Promote Children's Resilience	Canada
World Health Organization[28]	WHO guidelines on parenting interventions to prevent maltreatment and enhance parent–child relationships with children aged 0–17 years	International
World Health Organization[117]	Preventing violence through the development of safe, stable and nurturing relationships between children and their parents and caregivers	International
World Health Organization[15]	Nurturing care for early childhood development: a framework for helping children survive and thrive to transform health and human potential	International

Appendix C: Parenting Measurement Tools and Indicators

Author/Source	Measurement Tool/Indicator	Study Which Cited the Indicator
Goldberg & Williams 1988[94]	Parenting Scale (PS)	Heinrichs 2014 et al.[63] Lo 2021[70] Naumann et al. 2010[93]
Lindberg et al. 2013[103]	Parenting Self-Efficacy Scale (PSE)	Ruiz-Zaldibar et al. 2018[19] Enebrink 2015[76]
Gilmore 2009[104]	Parenting Sense of Competence Scale (PSOC)	Heinrichs et al. 2014[63] Brown et al. 2018[32] Enebrink 2015[76] Strickland & Samp 2013[66]
Abidin 1990[41]	Parenting Stress Index (PSI)	Porzig-Drummon 2014[90]
Heinrichs 2014[63]	Positive Parenting Questionnaire (PPQ)	Heinrichs et al. 2014[63]
Dadds & Powell 1991[51]	Parent Problem Checklist (PPC)	Heinrichs et al. 2014[63]
Bavolek & Keene, 1999[118]	Adult Adolescent Parenting Inventory: Form A (AAPI-2;)	Strickland & Samp 2013[66]
Hakim-Larson et al. 2006[67]	Emotion-Related Parenting Styles Self-Test (ERPS-ST)	Porzig-Drummond 2014[90]
Brestan et al. 1999[119]	Therapy Attitude Inventory	Porzig-Drummond 2014[90]
Kendall & Bloomfield 2005[60]	Tool to measure Parenting Self-Efficacy (TOPSE)	Enebrink 2015[76] Ruiz-Zaldibar et al. 2021[59]
Gross & John 2003[120]	The Emotion Regulation Questionnaire (ERQ) - parental emotion regulation	Enebrink 2015[76]

Author/Source	Measurement Tool/Indicator	Study Which Cited the Indicator
Trute & Hiebert-Murphy 2005[121]	Parenting Morale Index	Johnston et al. 2017[78]
Benzies et al. 2014[68]	Upstart Parent Survey	Johnston et al. 2017[78]
Stone & Burgess 2017[91]	'A Good Start' Well-being Web (GSW)	Stone & Burgess 2017[91]
Pridham & Chang, 1991[69]	How I Deal with Problems Regarding Care of My Baby (PPS) scale	Brown et al. 2018[32]
Pridham & Chang, 1989[105]	What Being the Parent of a Baby is Like-Revised (WPBL-R) scale	Brown et al. 2018[32]
Condon & Corkindale 1998[102]	Maternal postnatal attachment scale (MPAS); subscales = quality of attachment, pleasure in interaction, absence of hostility Subscales = interest, efficacy, satisfaction	O'Neill 2018 et al.[88]
Gerris et al. 1993[122]	Nijmegen Parenting Questionnaire	Ruiz-Zaldibar et al. 2018[19]
Slater 1987[123]	Parenting Dimensions Inventory	Ruiz-Zaldibar et al. 2018[19]
Kennett & Chislett 2012[124]	Parenting Resourcefulness Scale	Ruiz-Zaldibar et al. 2018[19]
Chislett & Kennett 2007[54]	Parent Child Interaction Scale	Ruiz-Zaldibar et al. 2018[19]
Dumka et al. 1986[125]	Parenting Self-Agency Measure	Ruiz-Zaldibar et al. 2018[19]
Down et al. 2014[57]	Parental Responsiveness Rating Scale (PaRRiS)	Levickis et al. 2020[92]
Haines et al. 2016[126]	Parenting Questionnaire (General)	Ruiz-Zaldibar et al. 2018[19]
Hamilton et al. 2015[64]	Me as a Parent' Scale (Parenting self-regulation)	Jose et al. 2019[79]
MacCoby & Martin 1983[127]	Escala de Evaluacion de Estilos Educativos (4Er)- measurement of parenting styles (authoritative, authoritarian, permissive, or negligent)	Ruiz-Zaldibar et al. 2021[59]

Author/Source	Measurement Tool/Indicator	Study Which Cited the Indicator
Willis 2022[56]	Early Relational Health Screen (ERHS)	Rosenblum et al.2022[65]
Anikiej & Kazmierczak 2019[128]	Parent responsiveness/sensitivity (Global Rating Scale)	Sharma et al. 2022[80]
Havighurst et al. 2010[77]	Parent Emotional Style Questionnaire (PESQ)	Havighurst et al. 2022[77]
Fabes et al. 1990[46]	Coping with Toddlers Negative Emotions Scale (CTNES)	Havighurst et al. 2022[77]
Christensen 1987[130]	Communication Patterns Questionnaire - measure of couple communication behavior	Kim et al. 2017[31]
Sharpley & Rogers 1984[131]	Abbreviated Dyadic Adjustment Scale (ADAS) – 7 item measure designed to assess the relationship quality of intact couples	Heinrichs et al. 2014[63]
Goldberg & Williams 1988[94]	Cultural Fitness and Usefulness Index	Heinrichs et al. 2014[63] Lo 2021[70] Naumann et al. 2010[93]

Appendix D: Measurement Tools by Domain

Table D1: Parent Mental Health

Author	Measurement Tool	Study Which Cited the Indicator
Lovibond & Lovibond 1995[39]	Depression Anxiety Stress Scale (DASS)	Porzig-Drummond et al. 2014[90]
Thomas et al. 2006[62]	Life Satisfaction Scale (LSS)	Heinrichs et al. 2014[63]
Goldberg et al. 1988[94]	The General Health Questionnaire (GHQ12) - parental mental health	Enebrink et al. 2015[76]
Cox et al. 1987[40]	Edinburg Postnatal Depression Scale (EPDS)	Johnston et al. 2017[78]
Cohen, Kamarck, & Mermelstein 1983[84]	Perceived Stress Scale	Johnston et al. 2017[78]
Spielberger & Gorsuch 1970[132]	Spielberger State-Trait Anxiety Scale	Johnston et al. 2017[78]
Kroenke et al. 2001[133]	Patient Health Questionnaire (PHQ-9)	Rosenblum et al. 2022[65]
Spitzer et al. 2006[134]	Anxiety (Generalized Anxiety Disorder 7)	Sharma et al. 2022[80]

Table D2: Child Health

Author	Measurement Tool	Study Which Cited the Indicator
Achenbach 1991[135]	Child Behavior Checklist (CBCL)	Heinrichs et al. 2014[63]
Döpfner & Lehmkuhl 2000[87]	Problem Checklist Subscales Attention-Deficit Hyperactivity Disorder (PCL-ADHD) and Oppositional Defiant Disorder (PCL-OD PCL-ADHD)	Heinrichs et al. 2014[63]

Author	Measurement Tool	Study Which Cited the Indicator
Sanders et al. 2000[24]	Problem Setting and Behavior Checklist (PSBC)	Heinrichs et al 2014[63]
Briggs-Gowan & Carter 2004[45]	Brief Infant-Toddler Social and Emotional Assessment (BITSEA)	Havinghurst et al. 2022[77]
LeBuffe & Naglieri 1999[136]	Devereux Early Childhood Assessment (DECA)	Kaminski et al. 2013[29]
Goodman 1997[43]	Strengths and Difficulties Questionnaire (SDQ)	Kaminski et al. 2013[29]
Eyberg & Pincus 1999[49]	Eyberg Child Behaviour Inventory (ECBI)	Porzig-Drummond et al. 2014[90] Porzig-Drummond et al. 2016[90]
KIDSCREEN[42]	Child health and Development questionnaire	Enebrink et al. 2015[76]
Birch et al. 1998[137]	Child feeding questionnaire	Ruiz-Zaldibar et al. 2018[19]
Haines et al 2016[126]	Toddler Care Questionnaire	Ruiz-Zaldibar et al. 2018[19]
Musher-Eizenman & Holub 2007[138]	Comprehensive Feeding Practice Questionnaire (CFPQ)	Ruiz-Zaldibar et al. 2021[59]
Fullard et al 1984[47]	Toddler Temperament Scale (TTS)	Havinghurst et al. 2022[77]

Table D3: Child Health Indicators

Indicators	Study Which Cited the Indicator
CPS data (substantiated cases)	Lo 2021[70]
ED/Hospital admissions (ICD-9 coding for physical abuse and neglect)	Lo 2021[70]

Table D4: Environment/Community

Author	Measurement Tool	Number of Studies Which Cited the tool
Barkley & Eldelbrock 1987[139]	Home Situation Questionnaire (HSQ)	Heinrichs et al. 2014[63]
Caldwell & Bradley 2003[140]	Home Observation for Measurement of Environment	Dishion 2015[30]
Rutter & Quinton 1977[141]	Family Adversity Index	Dishion 2015[30]
Sherbourne & Stewart 1991[75]	MOS (Medical Outcomes Study) Social Support Survey	Johnston 2017[78]
Broadhead et al. 1988[74]	Duke-UNC Functional Social Support Questionnaire	Ruiz-Zaldibar et al. 2018[19]
Revenson & Schiaffino 1990[73]	Social Support Measure	Brown 2018[32]

Table D5: Environment/Community Indicators

Indicators	Study Which Cited the Indicator
Receiving help from neighbors, greater engagement in neighborly activities, perception of child household safety	Lo 2021[70]
Perception of adult responsibility for preventing child sexual abuse	Lo 2021[70]
The involvement of community members	Lo 2021[70]
Partnerships with community institutions	Lo 2021[70]
Multidisciplinary collaboration	Lo 2021[70]
Responsiveness to the needs of communities	Lo 2021[70]

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