CULTIVATING HEALTHY ETHNIC-RACIAL IDENTITY DEVELOPMENT AMONG INFANTS AND TODDLERS THROUGH JUSTICE-BASED ETHNIC-RACIAL SOCIALIZATION

By

Anissa L. Eddie

A DISSERTATION

Submitted to
Michigan State University
in partial fulfillment of the requirements
for the degree of

Human Development and Family Studies – Doctor of Philosophy

2025

ABSTRACT

This dissertation examines the critical role of ethnic-racial socialization (ERS) in the early development of ethnic-racial identity (ERI) among infants and toddlers, with a focus on the transformative potential of justice-based ethnic-racial socialization (JBERS). While systems must be held responsible for the systemic racism that is deeply embedded in the social structures of the United States and perpetuated through both historical and contemporary practices, there is a role for accountability and intervention at the individual level as well. The early childhood period, particularly infancy and toddlerhood, presents a unique opportunity to engage caregivers and children in meaningful practices that can disrupt the development of harmful ethnic-racial biases and promote racial justice.

A key contribution of this work is the exploration of the literature on ethnic-racial awareness in the earliest stages of life. The existing literature primarily focuses on older children and often overlooks infants and toddlers, with limited attention given to the role of caregivers in fostering healthy ERI during the formative years of birth to age 3. This gap is addressed in a scoping review (Study 1) which synthesizes the current state of research on ethnic-racial awareness among children from birth to age 3. Study 1 identifies the need for more diverse, inclusive research that incorporates Multiracial populations and highlights the underrepresentation of toddlers in studies of ethnic-racial identity development, especially given the significance of this period in the emergence of self-awareness. Further, Study 1 demonstrates the need for more research on the ethnic-racial socialization practices among caregivers of infants and toddlers using validated measures.

Building on these findings, Study 2 introduces two new measures designed to assess caregivers' capacity to engage in JBERS with infants and toddlers. These measures focus on the

ERI beliefs that caregivers of infants and toddlers hold and ERS practices in which caregivers of infants and toddlers engage. These new measures offer a means of evaluating the potential for JBERS interventions. Study 2 contributes to the field by providing tools to assess how caregivers can be better equipped to support healthy ERI development in young children.

Taken together, the two studies inform the development of the Reciprocal Healthy Ethnic-Racial Identity Development (RHERID) model. Future research should build upon the findings of this dissertation to examine associations between JBERS delivery and infant/toddler outcomes among diverse ethnic-racial groups and within varying cultural contexts. Ultimately, this work underscores the importance of intentionally engaging in JBERS early as one aspect of the multimodal approach required to dismantle systemic racism and contribute to the broader pursuit of racial equity and social justice in the United States.

Keywords: ethnic-racial socialization, ethnic-racial identity, infant/toddler, caregiver practices, racial justice

This dissertation is dedicated to my younger self. To that “little part,” thank you for not letting me forget you and for helping me understand how to give you what you need. I have learned so much from our Sankofa journey together. I’m amazed at your wisdom and grateful for your resilience. I believe that many children will benefit from this work – work that you motivated and informed. I’m deeply appreciative and hope you can relax knowing you are safe and loved. I got us now.

ACKNOWLEDGMENTS

I am deeply grateful to my mentors, colleagues, friends, and family for their unwavering support throughout this Ph.D. journey. There is no way I could have arrived at this point without my vast systems of support. First, I want to acknowledge the individuals who encouraged me to go to college after high school and opened my eyes to my own academic potential: To Melissa Kamara Liggins for giving me the Entrada brochure during my 11th grade math class; to Jacque Fields for mothering so many of us through undergrad; to Stephanie Diepstra, who went above and beyond as an advisor; to Dr. Lissa Schwander, who seeded my love of macro work. All of you helped to launch me at a critical time in my personal development.

To everyone who generously had conversations with me about what it might look like to go back to school after 14 years in the field: Dr. Brandy Lovelady Mitchell, Dr. Regis Fox, Dr. Marlene Kowalski-Braun, Dr. Daniel Williams, Dr. Joe Kuilema, and my bestie, Dr. Gihane Jérémie-Brink. I also want to thank Michigan State University for awarding me the University Enrichment Fellowship. This fellowship enabled me to fully commit to the pursuit of my doctoral degree while also prioritizing my personal wellbeing and that of my family.

To my phenomenal advisor and dissertation chair, Dr. Claire Vallotton: You reassured me that we would find a way and then proceeded to walk with me at every step. You pushed and challenged me in all the best ways and pulled me back to reality when needed. You also extended me grace, support, and flexibility through all the unexpected circumstances that came my way these past five years. I can't imagine doing this without you. Many, many thanks.

To my fabulous dissertation committee members, Dr. Holly Brophy-Herb, Dr. Deborah Johnson (aka Auntie Deb), Dr. Iheoma Iruka, and my late but vital addition, Dr. Ryan Bowles. Your guidance, encouragement, and support have been invaluable. To Emily Jensen: I knew you

were going to be important from the moment you offered to be my stats buddy during our first semester. I'm so grateful that we have been able to take turns falling apart and supporting each other. What a gift it has been to be next to you on this wild ride. I will forever be impressed by the philosopher that you are, and I will always think of you and smile when I hear rare and interesting vocabulary words!

I want to thank all the caregivers who took my survey and the many people who helped me with recruitment. Because of your partnership, I was able to reach my recruitment goals and collect meaningful data. I also want to thank the scholars who reviewed my draft measures and provided feedback: Dr. Chelsea Delan-Williams, Dr. Charisse Pickron, Dr. Onnie Rogers, Dr. Iheoma Iruka, and Dr. Cristia Spears-Brown.

To my friends/framily: There are too many to list, but if you are reading this, it is pretty safe to assume you are one of them! For all the big and small ways you all have supported me and Team Eddie, I truly thank you. To my therapist, there are not enough words to express my thanks. So, to you, I offer the deepest bow of gratitude.

To my precious boys, Malachi, Nehemiah, and Josiah: When I started this journey in 2020, we were all doing "zoom school" at home. Thank you for your patience as we found our way together. You three are my greatest joy and biggest inspiration. I love you forever and always, no matter what! I also need to give a shout-out to my daughter, Toffee, the sweetest pup and the best writing support animal I know.

Finally, to Jermale: You have been the most incredible partner throughout this journey. You are my loudest cheerleader, my fiercest supporter, and my safest home. Thank you, Babe. My love for you is endless.

Originally, I did not include my mother or my maternal grandparents in these acknowledgements. Much of my research on ethnic-racial identity development and socialization has advanced in spite of them, not because of them, but my mom died 5 days before I defended my dissertation, and as my own ERI continues to develop through ongoing reflection, I want to offer this revision to my acknowledgements. I thank my grandmother who celebrated all of my academic accomplishments, told me to never stop writing, and was my constant refuge. I thank my grandfather who was able to move through his hardened racial beliefs to show me, my husband, and my children enduring love. And to my mother: All the ways she was able to mother me and all the ways she was not, have helped to make me who I am today. She did her best. I thank her, and I wish her nothing but peace.

PREFACE

As a Black identifying, biracial woman with African American and Euro-American heritage, I approach this research with a personal history of complex ethnic-racial identity development. Although my phenotypic features are more Black presenting than white, the cultural context of my upbringing was exclusively white, and I did not grow up having consistent relationships with the African American side of my family. My personal journey has inspired my desire to pursue this line of research in order to inform policy and practice that cultivates inclusive mindsets, promotes radical self-love, and disrupts the development of ethnic-racial bias in early childhood.

This dissertation is a product of my deep commitment to understanding and addressing systemic racism, particularly within the context of early childhood development in the United States. As a researcher and as an individual committed to racial equity, I was drawn to the intersection of ethnic-racial identity (ERI) development and ethnic-racial socialization (ERS) because I believe that the early years of life provide a powerful opportunity to foster healthy ethnic-racial identities and inclusive, justice-based mindsets. It is my hope that this work will contribute to a broader conversation about how racial inequities manifest and can be resisted at individual and systemic levels.

Throughout this dissertation, I have intentionally made a number of decisions that reflect my theoretical stance and the values that underpin this research. One key choice that may stand out is my decision not to capitalize the term "white" in reference to racial identity. This choice is aligned with the scholarship of Matias et al. (2014) and Hawkman (2020), both of whom argue that capitalizing "white" in language contributes to the normalization and dominance of whiteness in society. By not capitalizing “white,” I intend to symbolically challenge white

supremacy as it is entrenched not only in our social systems but also in our language. This decision is not one of carelessness or oversight, but rather a deliberate effort to provoke thought and highlight the ways in which language can perpetuate harmful structures of power.

It is my hope that the findings of this dissertation contribute not only to the academic community but also to the persistent efforts to resist hate, dismantle injustice, elevate human connectedness, and strengthen the movement toward collective liberation.

TABLE OF CONTENTS

CHAPTER 1: LITERATURE REVIEW AND THEORETICAL FRAMEWORK

Introduction

Systemic racism encompasses the myriad ways in which both historic and current race-based oppression perpetuate a constructed social order that values whiteness/lighter skin and devalues Blackness/darker skin (Escayg, 2020). Often operating with invisible complexity, it is interwoven throughout all social systems in the United States resulting in barriers to accessing equitable housing, health care, education, financial services, environmental safety, and judicial fairness (Braveman et al., 2022; Iruka et al., 2020). Systemic racism is one of the most detrimental problems in the context of the U.S. (Braveman et al., 2022; Feagin, 2013; Kendi, 2019), and implementing sustainable solutions will require numerous, multidimensional approaches primarily at the macro systems level. Yet micro system efforts and individual contributions are also needed (Holmgren, 2017).

Because social systems are comprised of and maintained by individuals, intervention at the individual level must be incorporated into the approaches to combat systemic racism (Meltzoff & Gilliam, 2024; Jemal & Bussey, 2022). At the individual level, work can start in the earliest years of life through intentional socialization processes and continue across the life span (Meltzoff & Gilliam, 2024; Williams et al., 2020). The early childhood period provides a unique opportunity for intervention at the individual level, for both children and caregivers, through justice-based ethnic-racial socialization (JBERS), a new concept explained further below. Starting the proactive work of JBERS with infants and toddlers provides opportunities to foster healthy ethnic-racial identity (ERI) development (e.g., having awareness of and positive regard for one's ERI and processing the nuances of what it means in a racialized society) and disrupt the emergence of harmful biases within the earliest stages of development (Bigler & Liben, 2007).

Further, caregiver engagement in JBERS with infants and toddlers can also evoke self-reflection and the ongoing evolution of their own ERI (Rogers et al., 2020).

I posit that JBERS is both developmentally relevant for infants and toddlers and impactful for their adult caregivers as it offers an individual level intervention that positions both young children and their caregivers to resist systemic racism through the adoption of positive regard toward self and radical empathy toward others. Caswell and Cifor define radical empathy as "a willingness to be affected, to be shaped by another's experience, without blurring the lines between the self and the other...empathy is radical if it critically and consciously shifts existing power relations in favor of those who are marginalized" (Arroyo-Ramírez et al., 2021, p. 3). However, our current understandings of developmentally relevant JBERS for our youngest learners is limited due to having very few ERS studies that include infants and toddlers in their samples and a lack of studies that examine ethnic-racial socialization (ERS) beliefs and practices among their caregivers.

Literature Review

What is Ethnic-Racial Identity?

ERI comprises the ways in which one perceives, describes, and values their personal ethnic-racial group membership (Umaña-Taylor et al., 2014), and how individuals define their sense of self based on the ethnic and racial backgrounds with which they feel affiliated (Williams et al., 2020). This felt affiliation can be expressed through the ways in which individuals label themselves, and the behaviors they connect to their ethnicity and race. Certain beliefs and attitudes can also be associated with ethnic-racial group membership (Umana-Taylor et al., 2014). While many aspects of ethnicity and race are socially constructed, the ways in which individuals internalize their meaning are real and often deeply personal (Hughes et al., 2006,

Umaña-Taylor et al., 2015). How each person describes and experiences their own ethnic-racial identity is not inherent but rather learned through socialization processes and exposure to different sociocultural contexts (Meltzoff & Gilliam, 2024; Williams et al., 2020).

Studying Racial Identity Development Among African American Children

Initial considerations of how young children conceptualize race gained prominence in social commentary and academic literature through the historic legal case of Brown vs the Board of Education (Bergner, 2009). Used in the case, the work of Drs. Kenneth and Mamie Clark demonstrated that African American (Black) children perceived Euro-American (white) children as possessing desirable traits such as intelligence, kindness, and beauty, at higher rates in comparison to Black children (Bergner, 2009). These finding suggested that separating African American and Euro-American children in educational settings caused emotional harm for the African American children and prevented them from truly having an equal education in comparison to their Euro-American peers (Bergner, 2009).

The Clarks' study sparked others to explore how children come to recognize and assign meaning to the construct of race through various processes of socialization (Hughes et al., 2006). Racial socialization research initially focused on the exploration of parenting practices specific to African American populations in the United States (Hughes et al., 2006; Hughes & Chen, 1997; Lesane-Brown, 2006). Given the racialized context that umbrellas the experiences of African Americans, many African American parents incorporate intentional messages into their child-rearing practices that are meant to prepare their children to navigate life within dominant culture and instill personal pride in their individual racial and cultural identities (Blanchard et al., 2019, Hughes et al., 2006; Williams et al., 2022).

An acclaimed 2006 review by Hughes and colleagues elevated four primary themes within racial socialization of African American children: cultural socialization, preparation for bias, promotion of mistrust, and egalitarianism (Blanchard et al., 2019; Hughes et al., 2006). Cultural socialization emphasizes the teaching of pride in one's history and heritage (Hughes et al., 2006). Preparation for bias focuses on explaining the function of stereotypes and discrimination (Hughes et al., 2006). Promotion of mistrust stresses the need for caution within interracial interactions. And egalitarianism concentrates on rejecting stereotypes and teaching children that all racial groups are equal. While egalitarianism is often an important message for African American children and children of color to receive, egalitarianism can easily become defined by silence and color evasive approaches among white populations and other privileged groups (Gallagher, 2015; Hughes et al., 2006).

The Emergence of Ethnic-Racial Socialization as a Construct

The literature expanded beyond African American populations to also address the experiences of other minoritized ethnic and racial groups such as those with Latiné, Asian, African, or Caribbean ancestry (Hughes et al., 2006; Phinney, 1989). The practice of using the combined term, 'ethnic-racial socialization' (ERS), is relatively new. Previously, racial socialization and ethnic socialization were discussed in the literature as separate constructs (Barnes, 1980; Bowman & Howard, 1985; Spencer, 1983). The term racial socialization was primarily used to describe the process of socializing Black/African American children, and ethnic socialization was used in reference to socialization within Latiné and Asian families (Hughes et al., 2006; Lesane-Brown et al., 2005). In 2008, Dr. Hazel Markus posited that race and ethnicity are inherently intertwined in how they relate to the understanding of individual identity and sociocultural contexts (Markus, 2008). The term ethnic-racial socialization is

reflective of this expansion, and both terms are often used in overlapping ways (Hughes et al., 2006). Many current scholars have moved toward use of the combined term, ethnic-racial socialization, to encapsulate the entirety of the construct (Doucet et al., 2018; Umaña-Taylor et al., 2014).

This unified perspective was affirmed in 2014 by the Ethnic and Racial Identity in the 21st Century Study Group (Rivas-Drake et al., 2014) and has since become standard in academic literature (Quintana, 1998; Umaña-Taylor et al., 2014; Yip, 2018). Some scholars also reverse the order using the phrase racial-ethnic socialization with the intention of centering and elevating race as the primary factor of import (Christophe et al., 2022). Both semantic choices acknowledge the interconnectedness of race and ethnicity in relation to social identities and outcomes.

Today, ERS refers to the messages that children receive regarding ethnicity and race (Hughes et al., 2006; Quintana, 1998). These messages come from caregivers (e.g., parents, families, and educators), environments (e.g., home, neighborhood, school, geographic region), and media (e.g., books, toys, television, and technology tools; Williams et al. 2020). Through these socializing agents, children learn about common norms, values, and customs that may be related to both their own ERI and that of others (Hughes et al., 2006). Like all aspects of socialization, ERS is influenced by the many social environments (e.g., schools, community, peers) in a child's life (Bronfenbrenner, 1995; García Coll et al., 1996; Spencer et al., 1997). However, caregivers (referring to all primary caregivers of young children including parents, family members, close community members, and educators) are typically the principal source of socialization messages in early childhood (Loyd & Gaither, 2018; White-Johnson et al., 2010).

The Connection Between ERI and ERS

The ways in which ERI emerges and evolves is a developmental process that aligns with the cumulative skills and capacities that young children gain over time. For example, infants typically have the visual and cognitive capacity to distinguish between same and other-race faces and attend to novelty in the people and experiences to which they are exposed (Hayden et al., 2009; Kelly et al., 2005; Liu et al., 2015; Zubler et al., 2022). By 2 years old, children have a sense of themselves as a unique individual with social identity group affiliations (Rochat, 2003; Waxman, 2021). By age 3, children use color names for skin tones and start identifying race as a factor for categorization (Aboud, 2013; Katz, 2003; Nesdale & Flesser, 2001). By 5 years old, children often express a bias toward whiteness and show different attitudes toward members of their own racial group and those in racial outgroups (Kinzler & Spelke, 2011; Raabe & Beelmann, 2011). While it is innate for infants and toddlers to notice and make meaning of observable differences among others, the development of harmful attitudes and exclusionary biases based on ethnicity and race is not innate, but rather the outcome of socialization (Bar-Haim et al., 2006; Bigler & Liben, 2007). Thus, there are opportunities to influence the development of these attitudes and biases through ERS practices.

In the United States, ERS tends to perpetuate the social construction of race that is based broadly on ethnic-racial heritage and observable phenotypic features such as skin color, eye shape, and hair texture (Quintana, 1998; Rogers et al., 2020) While all children are subject to some level of ERS within the U.S context, intentional engagement in ERS is most common among families with minoritized identities who often see ERS as a means of passing down cultural pride messages and preparing their children for expected ethnic-racial bias (Hughes et al., 2006).

Recognizing the universal nature of children receiving ERS messages from a wide variety of socializing agents, it is important to distinguish how the nature of the ERS messages will directly impact how children conceptualize ethnicity and race and develop their personal ERI (Meltzoff & Gilliam, 2024; Jemal & Bussey, 2022). ERS messages are never neutral. Rather, they can either perpetuate or disrupt oppression and systemic racism (Meltzoff & Gilliam, 2024; Jemal & Bussey, 2022). Following the non-neutrality of ERS, JBERS refers to a specific approach to ERS that integrates a color conscious ideology with a social justice framework.

JBERS messages focus on acknowledging the historic events that enabled the colonization and oppression of targeted communities of color along with the current mechanisms that promote and sustain white dominance. JBERS messages encourage individuals to discover and reflect on their own intersectional identities with the goals of understanding their personal history, honoring their individual dignity within the interconnectedness of shared humanity, and identifying their unique positionality and responsibility in relation to advancing anti-racism and social justice.

Theoretical Frameworks

Grounded in the frameworks of bioecological systems (Bronfenbrenner, 1979), the Integrative Model for the Study of Developmental Competencies in Minority Children (García Coll et al., 1996), a phenomenological variant of ecological systems (Spencer et al., 1997), and culture as a microsystem (Vélez-Agosto et al., 2017), the lifespan model of ethnic-racial identity posits that ERI development is a dynamic process that spans all developmental stages from infancy through adulthood (Williams et al., 2020). Based on this model, humans are innately primed to develop an awareness of ethnicity and race in infancy along with a base understanding of their own ethnic-racial affiliation, often facilitated by ERS (Katz, 2003; Williams et al., 2020).

As young children grow, these understandings expand and the dimensions of ethnic-racial attitudes, behaviors, and knowledge begin to evolve (Branch & Newcombe, 1986; Rogers et al., 2021; Umaña-Taylor et al., 2014). While a key driver of ERI development, ERS is not the only influence.

The dynamic nature of the lifespan model is demonstrated by how ERI development can vary in response to what the lifespan model refers to as individual factors, contextual factors, and identity relevant experiences (Vélez-Agosto et al., 2017; Williams et al., 2020). The lifespan model defines individual factors as, "factors to which society attaches social meaning" and thus they "elicit socializing scripts that are specific to the child" (Williams et al., 2020, p. 6). Examples of individual factors include racialized features (e.g., skin color), and assigned gender at birth (Williams et al., 2020). Contextual factors could include parental socioeconomic status, birthplace, and current sociopolitical events (Williams et al., 2020). Identity relevant experiences refer to any experience that directly impacts the way one perceives their ethnic-racial identity, from being the target of ethnic-racial discrimination to attending a school that integrates anti-bias education (Williams et al., 2020).

This array of factors contributes to the development of ERI, yet ERS is one of the few factors that caregivers of young children can directly impact. The JBERS approach is best suited to cultivate what I refer to as healthy ERI (i.e., ERI that entails ongoing reflection on intersectional identities with the goals of understanding personal history, honoring individual dignity, and identifying the positionality and responsibility everyone has in relation to advancing anti-racism and social justice). Given the fact that ERI begins to develop in infancy, JBERS should also start there.

The infancy and early childhood phases of the lifespan model address the dimensions of ethnic-racial priming, ethnic-racial awareness, and ethnic-racial affiliation. *Ethnic racial priming* acknowledges the unique period in infancy when babies have the potential to be responsive to a wide range of socialization factors and contexts (Kinzler, 2013; Williams et al., 2020). In connection to ERS, *ethnic-racial awareness* describes how individuals come to notice ethnic-racial groups as categories and make meaning of how ethnic-racial groups are perceived in society (Bigler & Liben, 2007; Williams et al., 2020). *Ethnic-racial affiliation* indicates how individuals come to understand themselves as belonging to one or more ethnic-racial categories or ingroups (Katz & Barrett, 1997; Nesdale et al., 2004; Williams et al., 2020). Positioned within these three initial phases of the lifespan model, ERS can be considered any identity relevant experience that is delivered to infants and toddlers through both implicit and explicit means (Williams et al., 2020). Infants and toddlers then leverage their socio-cognitive capacities to receive, and make meaning of ERS messages (Williams et al., 2020). The theoretical underpinnings of socio-cognitive capacity development can be understood through the lenses of Piaget's theory of cognitive development (Piaget, 1971). The internalization and re-construction of the socializing messages can be understood through Vygotsky's Sociocultural theory (Vygotsky & Cole, 1978).

Cognitive Development

Piaget's theory of cognitive development posits that children continuously construct knowledge and make meaning of information through exploration of and engagement with their world (Berk, 2021). According to Piaget's theory, infants and toddlers first operate in the sensorimotor period which is characterized by the infants' use of input gained through their senses and movements to construct meaning (Berk, 2021). Initially, infants demonstrate

awareness of sensory input and later leverage that awareness to accomplish sorting tasks (Chamberlain, 1999; Berk, 2021). Later, toddlers absorb information based on their ability to reflect that which is mirrored by the adults with whom they interact (Gergely & Unoka, 2008).

As toddlers process ERS information received from their environments and experiences, they begin to organize this information in ways that help them make sense of their own ERI and that of others (Bar-Haim et al., 2006; Kelly et al., 2005). The extent of this meaning making is expanded as children advance in their socio-cognitive development over time and influenced by the people and environments to which they are most frequently exposed (Gaither et al., 2012; Heron-Delaney et al., 2017; Kelly et al., 2009; Xiao et al., 2018). Piaget's theory further connects to the lifespan model as the individual factors and local current context (described in the lifespan model as social identities and social environments respectively) influence how young children mentally adapt their understandings of their own and others' ethnic-racial identities to make sense of what they see happing around them, thus allowing their cognition to better represent the world as they observe it (Berk, 2021). Again, ERS is a prime contributor to this process (e.g., Katz, 2003).

Sociocultural Theory

The lifespan model is also aligned with Vygotsky's sociocultural theory which focuses on how children come to understand their culture through social interactions (Thomas, 2005; Vygotsky & Cole, 1978). These interactions are especially meaningful when they are with others who are more knowledgeable or skilled than the child (Shabani et al., 2010). Children look to these models for examples of how to think and behave according to their community's cultural norms and values (Thomas, 2005). As children absorb this cultural learning (often through ERS), what they observe, and experience becomes what they think and do (Berk, 2021). This relates to

the *identity relevant experiences* aspect of the lifespan model which refers to experiences that evoke awareness and evaluation of one's ethnic-racial identity (i.e., ERS; Williams et al., 2020). Taken together, the lifespan model, cognitive development theory and sociocultural theory provide a strong conceptual foundation from which to consider ERS among infants and toddlers.

Justice-Based Ethnic-Racial Socialization with Infants and Toddlers

Developmental Relevance of ERS with Infants and Toddlers

Previous literature has begun to examine the ERS beliefs (options and values associated with ERS) that caregivers of young children express, and the practices (strategies for delivering ERS) that they engage in. Yet, this research has primarily focused on children ages 3 and older (Branch & Newcombe, 1986; Phinney, 1989; Stevenson, 1995; Umaña-Taylor et al., 2014). It was once thought that ethnicity and race were not salient to children until the preschool years (Nesdale, 1999); however, there is a growing body of evidence to the contrary (Fassbender et al., 2012; Hayden, 2012; Katz, 2003; Pickron et al., 2017), including evidence that by 3 years old, children begin to demonstrate ethnic-racial bias (e.g., Dunham et al., 2013, Katz, 2003 Murray & Mandata, 2002). In response to this evidence, extending the cultivation of healthy ERI to the developmental stage of birth to age 3 is essential. Doing so will support the cultivation of positive self-regard and inclusive mindsets toward others during the critical early years while also disrupting the development of harmful ethnic-racial bias.

The long-term impact of JBERS is also promising as healthy ERI has been associated with higher academic achievement, and improved health among adolescents from minoritized backgrounds (Rivas-Drake et al., 2014). Additionally, as caregivers engage in JBERS with infants and toddlers, I hypothesize that caregivers are continuing their own ERI development. For example, as caregivers participate in JBERS practices, they may be prompted to reflect on

the ERS messages they have previously received. Experiences that may not have held significant meaning at the moment they occurred may be reconsidered upon reflection and thus take on new meaning, adding more complexity and nuance to the caregiver's perspective on their own ERI (Williams et al., 2020), and greater understanding of their own ERS. I posit that this reciprocal process invites children and caregivers to actively participate in dismantling systemic racism starting on the micro level in the earliest years of childhood.

Proposed Reciprocal Ethnic-Racial Identity Development (RERID) Model

Using the lifespan model of ethnic-racial identity as the overarching premise, the proposed model of reciprocal ethnic-racial identity development (RERID; see Figure 1) integrates cultural ecological frameworks (e.g., Bronfenbrenner, 1979; García Coll et al., 1996; Spencer, 2006; Vélez-Agosto et al., 2017), cognitive developmental theory (e.g., Piaget, 1971), and sociocultural theory (e.g., Vygotsky, 1978). From the lifespan model of ethnic-racial identity, four dimensions are particularly relevant to the proposed model: individual factors, local current context, the ethnic-racial priming period, and identity relevant experiences (Williams et al., 2020).

Organization of the RERID Model

The following section describes the elements of the RERID model and their organization. First, RERID recognizes the individual factors people are born with such as skin color, hair texture, sex organs, and phenotypic features that are often affiliated with social constructs that carry systemically assigned meaning. Further, RERID acknowledges the ways in which social constructs can promote or inhibit access to specific contextual environments. Thus, the model displays both the child and the adult caregiver as passing through individual factors before

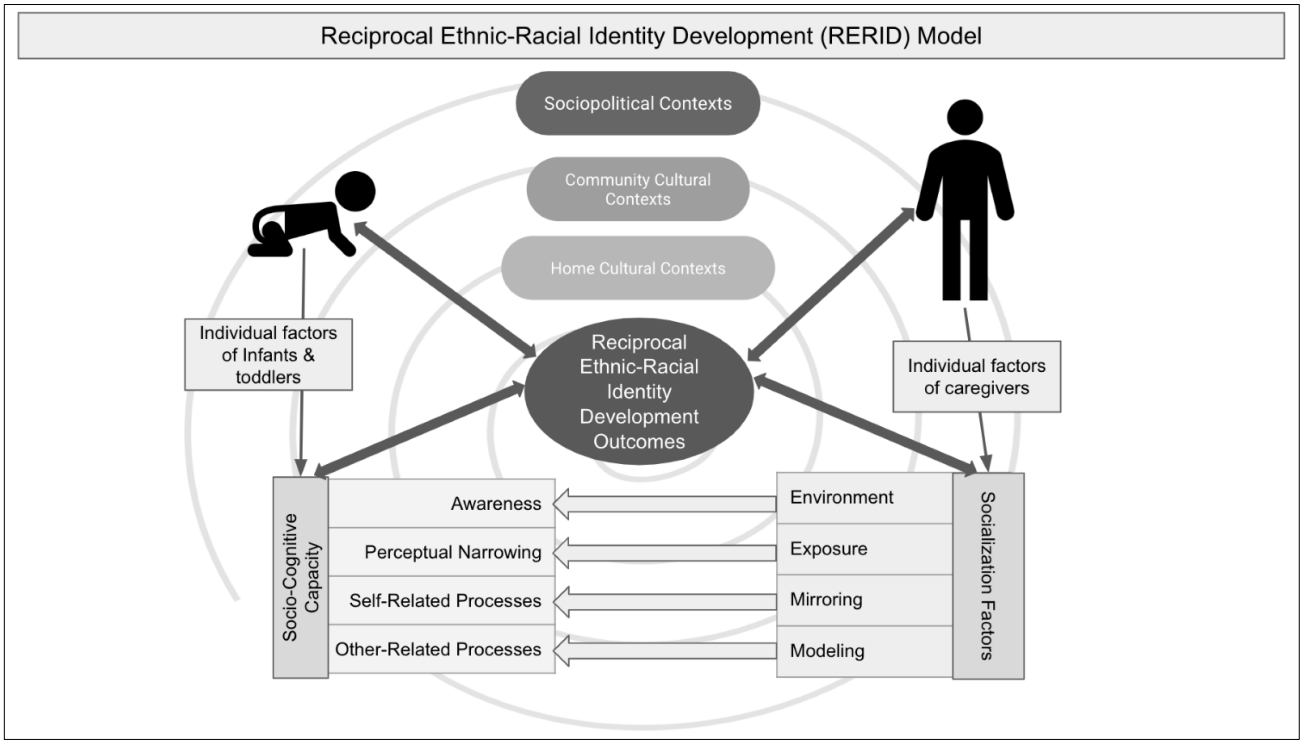
connecting to the ways in which each contributes to the reciprocal ethnic-racial identity development outcomes pictured in the middle of the model.

The ways in which infants and toddlers contribute to the process are identified as socio-cognitive capacity starting as basic environmental awareness in early infancy and progressing downward in the table through developmental processes including perceptual narrowing, self-related processes ("What children know about their own ethnicity-race, their attitudes, evaluations, and feelings about their ethnic-racial group"; Rogers et al., 2021, p. 7), and other-related processes ("The ways that children use ethnic-racial information to make categorizations and evaluations of, and comparisons to others"; Rogers et al., 2021, p. 7) in alignment with ongoing development through later infancy and the toddler years. Similarly, the caregiver contributions to the process are identified as socialization factors that start with environmental context that influences infant awareness and progresses through exposure, mirroring, and modeling. Similarly, the caregiver contributions to the process are identified as socialization factors that start with environmental context that influences infant awareness and progresses through exposure, mirroring, and modeling. All infant/toddler and caregiver contributions are understood as occurring within numerous levels of cultural context (e.g., home, community, and sociopolitical).

The cultural contexts are visualized as a background spiral to represent the influence of culture at the microsystem level with both proximal and distal integration across all levels of ecological systems. Finally, the double headed arrows represent the ongoing, reciprocal nature of the visualized process. Ethnic-racial identity development outcomes are directly influenced by the contribution of both infant/toddler socio-cognitive development and caregiver socialization factors.

Figure 1

Reciprocal Ethnic-Racial identity Development (RERID) Model



While infants and toddlers experience the natural trajectory of their social-cognitive development, they continue to expand and deepen their own ERI. At the same time, caregiver engagement in the process of contributing socialization factors may directly influence the continuous development of their own ERI.

RERID Model Connections with the Lifespan Model and Theoretical Frameworks

There are countless factors that impact the social and identity development of young children (Berk, 2021). These factors include a complex and dynamic combination of innate biology and contextual environments (Berk, 2021). In considering infancy as the initial period of the lifespan model, the biological aspects that infants bring to their own developmental processes are prominent (Bigler & Liben, 2007; Njoroge et al., 2009). Mere moments after birth, infants

can display the physical capacity to suck, swallow, grasp, root, hear, move, and so on (e.g., Njoroge et al., 2009). Their inborn cognition is also apparent. The ways that they can distinguish and turn toward familiar voices and communicate needs by crying are just two examples of the socio-cognitive connections that can be observed immediately after birth (Berk, 2021; Chamberlain, 1999). And this capacity grows exponentially within the first year of a child's life (Berk, 2021; Njoroge et al., 2009). Piaget's developmental cognitive theory describes the ways in which infants take in and organize new information through their senses and the input they receive through motor functions (Berk, 2021; Miller, 2016).

Cognitive-development theory posits that children continuously construct knowledge and make meaning of information through exploration of and engagement with their world (Berk, 2021). The sensorimotor period described by Piaget aligns with the cognitive capacity and skills reflected in the RERID model (Berk, 2021).

As infants' cognitive skills continue to advance, their contextual environments become more influential (Berk, 2021). As Bronfenbrenner's bioecological systems theory reflects, there are many interactive contexts that influence a child's development (Miller, 2016; Thomas, 2005). Although the infant can pursue innumerable developmental paths, their environmental context begins to create boundaries and influence direction (Berk, 2021). Over time, infants begin to lose the ability to recognize and differentiate sounds of language, characteristics of facial features, and other things that they are not regularly exposed to in their environment (Krasotkina et al., 2018). This process of perceptual narrowing can inform preferences that may evolve into biases (Bigler & Liben, 2007). Thus, the importance of ethnic-racial diversity within contextual environments becomes crucial (Berk, 2021).

The impact of contextual environments on the development of infants and toddlers is also highly influenced by culture. Vélez-Agosto and colleagues offer a useful extension to bioecological systems theory by positioning culture as a proximal, embedded micro system (notated as the background spiral in the RERID model), rather than a distal macro element (Vélez-Agosto et al., 2017). In this revision of Bronfenbrenner's theory culture is defined as having a vital role in creating and influencing microsystems and thus directly impacting human development processes in a central way (Vélez-Agosto et al., 2017). Daily activities and interactions are deeply dependent on cultural norms and practices (Vélez-Agosto et al., 2017). As a result, universal developmental influences such as family, neighborhood, and educational settings; are never entirely homogeneous (Vélez-Agosto et al., 2017). The RERID model posits that this perspective differentiates both the developmental processes of infants and toddlers and the socialization practices of the adults who care for them in accordance with cultural contexts.

Caregivers bring socialization responses that work in reciprocal relationship with the contributions of infants and toddlers (Bigler & Liben, 2007). Caregivers introduce salience based on the environmental contexts they curate which cultivates familiarity among infants and toddlers based on exposure (Fitzgerald et al., 2009). They offer modeling through the attitudes and behaviors they display in front of infants and toddlers. Mirroring is displayed through the ways they directly engage with infants and toddlers in response to the child's various social identities (Rogers et al., 2021).

The RERID model makes space for aspects of ethnic-racial identity development to scaffold one another across the lifespan while also acknowledging the unique aspects that are typically housed within each developmental period. As the lifespan model exemplifies, the development of ethnic-racial identity does not occur in any one developmental period or

environmental context. Rather, it dynamically extends across the full continuum of a lifetime (Williams et al., 2020). The full scope of ethnic-racial identity cannot be understood apart from a lifespan perspective, and the lifespan perspective cannot be understood apart from in-depth examinations of how it functions within specific developmental periods and particular environmental contexts.

The proposed RERID model compliments the lifespan model by offering a detailed framework that applies to the lifespan model's first developmental stage. The RERID model also complements the lifespan model with its presentation of socialization as a reciprocal process that is relevant across the lifespan. Providing a thorough examination of ethnic-racial identity development and socialization within this early developmental period also serves to strengthen the foundational knowledge on which the rest of the continuum relies. Alongside frameworks that address other stages of the lifespan model, the RERID model can support ongoing research and inform practical applications.

Directions for Future Research

While leading scholars have successfully elevated ERS research with adolescents, elementary age students, and preschoolers (Hughes et al., 2006; Neblett Jr. et al., 2012; Quintana, 1998; Rivas-Drake et al., 2014; Umaña-Taylor et al., 2014), the literature on caregiver delivered ERS with infants and toddlers remains scarce. In response, it is important to examine what is known about the developmental relevance of ethnicity and race among infants and toddlers in order to better prepare parents and others to understand when and how they can effectively deliver JBERS. Further, there is a need to explore the beliefs that caregivers of ethnically-racially diverse infants and toddlers hold regarding ERS (e.g., Do they take a color evasive approach to ERS, or a JBERS approach?), and the explicit ERS practices they

intentionally engage in with the children in their care. Both efforts could ultimately be used to create educational supports for families, early educators, and others to engage in JBERS from the earliest and most malleable point in a child's life.

Conclusion

Systemic racism and Western dominance aid the development of harmful biases and perpetuate systems of oppression (Braveman et al., 2022; Iruka et al., 2020). These concepts are embedded in implicit and explicit socialization practices and evidence of their harm is clear even among young children (Harris-Britt et al., 2007; Meltzoff & Gilliam, 2024; Perszyk et al., 2019). The devastating consequences that arise from systemic racism, fear, and hate must be confronted from multiple angles. As individuals and systems work to unlearn misinformation and operationalize equity in adulthood, caregivers of young children can engage by proactively supporting the learning journeys of the children in their care with intention and urgency (Jemal & Bussey, 2022).

Given the complexity and magnitude of this mandate, there is no such thing as starting too early. Thus, further exploration of how infants and toddlers come to notice and make meaning of ethnic-racial differences is vital. Additionally, there is a need to develop deeper understanding of how adult caregivers of infants and toddlers think about ERS, what ERS practices they engage in, and how they can be equipped to cultivate healthy ERI among young children as part of a multidimensional pursuit of racial equity and social justice.

REFERENCES

Aboud, F. E. (2013). What are they thinking? The mystery of young children's thoughts on race. In *Navigating the social world: What infants, children, and other species can teach us* (1534281887; 2013-12218-061; pp. 332–335, Chapter xxiii, 424 Pages). Oxford University Press, New York, NY. https://doi.org/10.1093/acprof:oso/9780199890712.003.0061

Arroyo-Ramírez, E., Jones, J., O'Neill, S., & Smith, H. (2021). An introduction to radical empathy in archival practice. *Journal of Critical Library and Information Studies*, 3(2), Article 2. https://doi.org/10.24242/jclis.v3i2.171

Bar-Haim, Y., Ziv, T., Lamy, D., & Hodes, R. M. (2006). Nature and nurture in own-race face processing. *Psychological Science*, *17*(2), 159–163. https://doi.org/10.1111/j.1467-9280.2006.01679.x

Barnes, E. J. (1980). The Black community as the source of positive self-concept for Black children: A theoretical perspective. *Black Psychology*, *2*(1), 106–130.

Bergner, G. (2009). Black children, white preference: Brown v. board, the doll tests, and the politics of self-esteem. *American Quarterly*, 61(2), 299–332.

Berk, L. E. (2021). *Infants, children, and adolescents, 9th Edition*. https://www.pearson.com/content/one-dot-com/one-dot-com/us/en/higher-education/program.html

Bigler, R. S., & Liben, L. S. (2007). Developmental intergroup theory: Explaining and reducing children's social stereotyping and prejudice. *Current Directions in Psychological Science*, *16*(3), 162–166. https://doi.org/10.1111/j.1467-8721.2007.00496.x

Blanchard, S. B., Coard, S. I., Hardin, B. J., & Mereoiu, M. (2019). Use of parental racial socialization with African American toddler boys. *Journal of Child and Family Studies*, 28(2), 387–400. https://doi.org/10.1007/s10826-018-1274-2

Bowman, P. J., & Howard, C. (1985). Race-related socialization, motivation, and academic achievement: A study of Black youths in three-generation families. *Journal of the American Academy of Child Psychiatry*, *24*(2), 134–141. http://dx.doi.org.proxy1.cl.msu.edu/10.1016/S0002-7138(09)60438-6

Branch, C. W., & Newcombe, N. (1986). Racial attitude development among young black children as a function of parental attitudes: A longitudinal and cross-sectional study. *Child Development*, *57*(3), 712–721.

Braveman, P. A., Arkin, E., Proctor, D., Kauh, T., & Holm, N. (2022). Systemic and structural racism: Definitions, examples, health damages, and approaches to dismantling. *Health Affairs*, *41*(2), 171–178. https://doi.org/10.1377/hlthaff.2021.01394

Bronfenbrenner, U. (1979). *The ecology of human development.* Harvard University Press.

Bronfenbrenner, U. (1995). Developmental ecology through space and time: A future perspective. In *Examining lives in context: Perspectives on the ecology of human development* (pp. 619–647). American Psychological Association. https://doi.org/10.1037/10176-018

Caswell, M., & Cifor, M. (2016). From human rights to feminist ethics: radical empathy in the archives. *Archivaria*, 81(1), 23–43.

Chamberlain, D. B. (1999). Babies are not what we thought: Call for a new paradigm. *Journal of Prenatal & Perinatal Psychology & Health*, *14*(1/2), 127–144.

Christophe, N. K., Stein, G. L., Kiang, L., Johnson, N. C., Jones, S. C. T., Stevenson, H. C., Anyiwo, N., & Anderson, R. E. (2022). A 21st century take on racial-ethnic socialization: Patterns of competency and content among diverse parents of color. *Social Sciences*, *11*(2), Article 2. https://doi.org/10.3390/socsci11020088

Doucet, F., Banerjee, M., & Parade, S. (2018). What should young Black children know about race? Parents of preschoolers, preparation for bias, and promoting egalitarianism. *Journal of Early Childhood Research*, 16(1), 65–79. https://doi.org/10.1177/1476718X16630763

Dunham, Y., & Degner, J. (2013). From categories to exemplars (and back again). In *Navigating the social world: What infants, children, and other species can teach us* (pp. 275–280). Oxford University Press. https://doi.org/10.1093/acprof:oso/9780199890712.003.0050

Escayg, K.-A. (2020). Anti-racism in U.S. early childhood education: Foundational principles. *Sociology Compass*, *14*(4), e12764. https://doi.org/10.1111/soc4.12764

Fassbender, I., Lohaus, A., Thomas, H., Teubert, M., Vierhaus, M., Spangler, S. M., Kolling, T., Goertz, C., Graf, F., Lamm, B., Gudi, H., Freitag, C., Keller, H., Knopf, M., & Schwarzer, G. (2012). Association learning with own- and other-race faces in three- and six-month old infants—a longitudinal study. *Infant and Child Development*, *21*(4), 325–337. https://doi.org/10.1002/icd.756

Feagin, J. (2013). *Systemic racism: A theory of oppression*. Routledge.

Fitzgerald, H. E., Mann, T., Cabrera, N., Sarche, M., & Qin, D. (2009). Development of infants and toddlers in ethnoracial families. *Infant Mental Health Journal*, *30*(5), 425–432. https://doi.org/10.1002/imhj.20222

Gaither, S. E., Pauker, K., & Johnson, S. P. (2012). Biracial and monoracial infant own-race face perception: An eye tracking study. *Developmental Science*, *15*(6), 775–782. https://doi.org/10.1111/j.1467-7687.2012.01170.x

Gallagher, C. A. (2014). Color-blind egalitarianism as the new racial norm. In K. Murji & J. Solomos (Eds.), *Theories of race and ethnicity: contemporary debates and perspectives* (pp. 40–56). chapter, Cambridge: Cambridge University Press. https://doi.org/10.1017/CBO9781139015431.006

Gallagher, C. A. (2015). Color-blind egalitarianism as the new racial norm. *Theories of race and ethnicity: Contemporary debates and perspectives*, 40-56.

García Coll, C., Lamberty, G., Jenkins, R., McAdoo, H. P., Crnic, K., Wasik, B. H., & Vázquez García, H. (1996). An integrative model for the study of developmental competencies in minority children. *Child Development*, *67*(5), 1891–1914.

Gergely, G., & Unoka, Z. (2008). Attachment, affect-regulation, and mentalization: The developmental origins of the representational affective self. In *Social Cognition and Developmental Psychopathology* (pp. 305–342). Oxford University Press. https://doi.org/10.1093/med/9780198569183.003.0011

Harris-Britt, A., Valrie, C. R., Kurtz-Costes, B., & Rowley, S. J. (2007). Perceived racial discrimination and self-esteem in African American youth: Racial socialization as a protective factor. *Journal of Research on Adolescence*, *17*(4), 669–682. https://doi.org/10.1111/j.1532-7795.2007.00540.x

Hayden, A., Bhatt, R. S., Zieber, N., & Kangas, A. (2009). Race-based perceptual asymmetries underlying face processing in infancy. *Psychonomic Bulletin & Review*, *16*(2), 270–275. https://doi.org/10.3758/PBR.16.2.270

Hayden, A. N. (2012). *The role of racial information in infant face processing* (1266165583; 2012-99200-012; Issue AAI3491662).

Heron-Delaney, M., Damon, F., Quinn, P. C., Meary, D., Xiao, N. G., Lee, K., & Pascalis, O. (2017). An adult face bias in infants that is modulated by face race. *International Journal of Behavioral Development*, *41*(5), 581–587. https://doi.org/10.1177/0165025416651735

Holmgren, M. (2017). *About collective impact: Types of problems, degrees of change, learning loops, and methods of thinking*. https://www.tamarackcommunity.ca/latest/about-collective-impact-types-of-problems-degrees-of-change-learning-loops-and-methods-of-thinking

Hughes, D., & Chen, L. (1997). When and what parents tell children about race: An examination of race-related socialization among African American families. *Applied Developmental Science*, *1*(4), 200–214. https://doi.org/10.1207/s1532480xads0104_4

Hughes, D., Rodriguez, J., Smith, E. P., Johnson, D. J., Stevenson, H. C., & Spicer, P. (2006). Parents' ethnic-racial socialization practices: A review of research and directions for future study. *Developmental Psychology*, *42*(5), 747–770. https://doi.org/10.1037/0012-1649.42.5.747

Iruka, I., Curenton, S., Durden, T., & Escayg, K.A. (2020). *Don't look away: Embracing anti-bias classrooms*. https://www.kaplanco.com/product/33461/dont-look-away-embracing-anti-bias-classrooms?c=16%7CTR1026

Jemal, A., & Bussey, S.R., (2022). Liberatory education: We are the ones we've been waiting for. In M. Sykes, & K. Ostendorf. *Child care justice: Transforming the system of care for young children.* (pp. 20-47) Teachers College Press.

Katz, P. A. (2003). *Racists or tolerant multiculturalists? How do they begin? https://*doi=10.1037%2F0003-066X.58.11.897b

Katz, P. A., & Barrett, M. (1997). *Early Predictors of Children's Intergroup Attitudes*. https://eric.ed.gov/?id=ED415452

Kelly, D. J., Liu, S., Lee, K., Quinn, P. C., Pascalis, O., Slater, A. M., & Ge, L. (2009). Development of the other-race effect during infancy: Evidence toward universality? *Journal of Experimental Child Psychology*, *104*(1), 105–114. https://doi.org/10.1016/j.jecp.2009.01.006

Kelly, D., Quinn, P., Slater, A., Lee, K., Gibson, A., Smith, M., Ge, L., & Pascalis, O. (2005). Three-month-olds, but not newborns, prefer own-race faces. *Developmental Science*, *8*(6), F31–F36. https://doi.org/10.1111/j.1467-7687.2005.0434a.x

Kendi, I. X. (2019). *How to be an antiracist* (First Edition). One World.

Kinzler, K. D. (2013). The development of language as a social category. In *Navigating the social world: What infants, children, and other species can teach us* (1534280943; 2013-12218-057; pp. 314–317, Chapter xxiii, 424 Pages). Oxford University Press, New York, NY. https://doi.org/10.1093/acprof:oso/9780199890712.003.0057

Kinzler, K. D., & Spelke, E. S. (2011). Do infants show social preferences for people differing in race? *Cognition*, *119*(1), 1–9. https://doi.org/10.1016/j.cognition.2010.10.019

Krasotkina, A., Goetz, A., Hoehle, B., & Schwarzer, G. (2018). Perceptual narrowing in speech and face recognition: Evidence for intra-individual cross-domain relations. *Frontiers In Psychology*, *9*. https://doi.org/10.3389/fpsyg.2018.01711

Lesane-Brown, C. L., Brown, T. N., Caldwell, C. H., & Sellers, R. M. (2005). The comprehensive race socialization inventory. *Journal of Black Studies*, *36*(2), 163–190. https://doi.org/10.1177/0021934704273457

Liu, S., Xiao, W. S., Xiao, N. G., Quinn, P. C., Zhang, Y., Chen, H., Ge, L., Pascalis, O., & Lee, K. (2015). Development of visual preference for own- versus other-race faces in infancy. *Developmental Psychology*, *51*(4), 500–511. https://doi.org/10.1037/a0038835

Loyd, A. B., & Gaither, S. E. (2018). Racial/ethnic socialization for White youth: What we know and future directions. *Journal of Applied Developmental Psychology*, 59, 54–64. https://doi.org/10.1016/j.appdev.2018.05.004

Markus, H. R. (2008). Pride, prejudice, and ambivalence: Toward a unified theory of race and ethnicity. *American Psychologist*, *63*(8), 651–670. https://doi.org/10.1037/0003-066X.63.8.651

Meltzoff, A., Gilliam, W.S. (2024). Young children & implicit racial biases. *Daedalus* 153 (1): 65–83. https://doi.org/10.1162/daed_a_02049

Miller, P. H. (2016). *Theories of developmental psychology* (6th edition). Worth Publishers.

Murray, C. B., & Mandara, J. (2002). Racial identity development in African American children: Cognitive and experiential antecedents. In *Black children: Social, educational, and parental environments*, 2nd ed (pp. 73–96). Sage Publications, Inc.

Neblett Jr., E. W., Rivas-Drake, D., & Umaña-Taylor, A. J. (2012). The promise of racial and ethnic protective factors in promoting ethnic minority youth development. *Child Development Perspectives*, *6*(3), 295–303. https://doi.org/10.1111/j.1750-8606.2012.00239.x

Nesdale, D. (1999). Social identity and ethnic prejudice in children. *Psychology and Society*.

Nesdale, D., Durkin, K., Maass, A., & Griffiths, J. (2004). Group status, outgroup ethnicity and children's ethnic attitudes. *Journal of Applied Developmental Psychology*, *25*(2), 237–251. https://doi.org/10.1016/j.appdev.2004.02.005

Nesdale, D., & Flesser, D. (2001). Social identity and the development of children's group attitudes. *Child Development*, *72*(2), 506–517. https://doi.org/10.1111/1467-8624.00293

Njoroge, W., Benton, T., Lewis, M. L., & Njoroge, N. M. (2009). What are infants learning about race? A look at a sample of infants from multiple racial groups. *Infant Mental Health Journal*, *30*(5), 549–567. https://doi.org/10.1002/imhj.20228

Perszyk, D. R., Lei, R. F., Bodenhausen, G. V., Richeson, J. A., & Waxman, S. R. (2019). Bias at the intersection of race and gender: Evidence from preschool-aged children. *Developmental Science*, *22*(3), e12788. https://doi.org/10.1111/desc.12788

Phinney, J. S. (1989). Stages of ethnic identity development in minority group adolescents. *The Journal of Early Adolescence*, *9*(1–2), 34–49. https://doi.org/10.1177/0272431689091004

Piaget, J. (1971). The theory of stages in cognitive development. In D. R. Green, M. P. Ford, & G. B. Flamer, *Measurement and Piaget*. McGraw-Hill.

Pickron, C. B., Fava, E., & Scott, L. S. (2017). Follow my gaze: Face race and sex influence gaze-cued attention in infancy. *Infancy*, *22*(5), 626–644. https://doi.org/10.1111/infa.12180

Quintana, S. M. (1998). Children's developmental understanding of ethnicity and race. *Applied & Preventive Psychology*, *7*(1), 27–45. http://dx.doi.org.proxy2.cl.msu.edu/10.1016/S0962-1849(98)80020-6

Raabe, T., & Beelmann, A. (2011). Development of ethnic, racial, and national prejudice in childhood and adolescence: A multinational meta-analysis of age differences: Age differences in prejudice. *Child Development*, *82*(6), 1715–1737. https://doi.org/10.1111/j.1467-8624.2011.01668.x

Rivas-Drake, D., Seaton, E. K., Markstrom, C., Quintana, S., Syed, M., Lee, R. M., Schwartz, S. J., Umaña-Taylor, A. J., French, S., Yip, T., & Ethnic and Racial Identity in the 21st Century Study Group. (2014). Ethnic and racial identity in adolescence: Implications for psychosocial, academic, and health outcomes. *Child Development*, *85*(1), 40–57. https://doi.org/10.1111/cdev.12200

Rochat, P. (2003). Five levels of self-awareness as they unfold early in life. *Consciousness and Cognition*, *12*(4), 717–731. https://doi.org/10.1016/S1053-8100(03)00081-3

Rogers, L. O., Kiang, L., White, L., Calzada, E. J., Umaña-Taylor, A. J., Byrd, C., Williams, C. D., Marks, A., & Whitesell, N. (2020). Persistent concerns: Questions for research on ethnic-racial identity development. *Research in Human Development*, *17*(2–3), 130–153. https://doi.org/10.1080/15427609.2020.1831881

Rogers, O., Mastro, D., Robb, M. B., & Peebles, A. (2021). *The inclusion imperative: Why media representation matters for kids' ethnic-racial development*. Common Sense.

Shabani, K., Khatib, M., & Ebadi, S. (2010). Vygotsky's zone of proximal development: Instructional implications and teachers' professional development. *English Language Teaching*, *3*(4), p237. https://doi.org/10.5539/elt.v3n4p237

Spencer, M. B. (1983). Children's cultural values and parental child rearing strategies. *Developmental Review*, *3*(4), 351–370. http://dx.doi.org.proxy1.cl.msu.edu/10.1016/0273-2297(83)90020-5

Spencer, M. B., Dupree, D., & Hartmann, T. (1997). A phenomenological variant of ecological systems theory (PVEST): A self-organization perspective in context. *Development and Psychopathology*, *9*(4), 817–833. https://doi.org/10.1017/S0954579497001454

Stevenson, H. C. (1995). Relationship of adolescent perceptions of racial socialization to racial identity. *Journal of Black Psychology*, *21*(1), 49–70. https://doi.org/10.1177/00957984950211005

Thomas, R. M. (2005). *Comparing theories of child development* (6th ed.). Wadsworth/Thomson Learning.

Umaña-Taylor, A. J., Quintana, S. M., Lee, R. M., Cross Jr., W. E., Rivas-Drake, D., Schwartz, S. J., Syed, M., Yip, T., Seaton, E., & Ethnic and Racial Identity in the 21st Century Study Group. (2014). Ethnic and racial identity during adolescence and into young adulthood: An integrated conceptualization. *Child Development*, *85*(1), 21–39. https://doi.org/10.1111/cdev.12196

Vélez-Agosto, N. M., Soto-Crespo, J. G., Vizcarrondo-Oppenheimer, M., Vega-Molina, S., & García Coll, C. (2017). Bronfenbrenner's bioecological theory revision: Moving culture from the macro into the micro. *Perspectives on Psychological Science*, *12*(5), 900–910. https://doi.org/10.1177/1745691617704397

Vygotsky, L. S., & Cole, M. (1978). *Mind in society: Development of higher psychological processes*. Harvard University Press.

Waxman, S. R. (2021). Racial awareness and bias begin early: Developmental entry points, challenges, and a call to action. *Perspectives on Psychological Science*, *16*(5), 893–902. https://doi.org/10.1177/17456916211026968

White-Johnson, R. L., Ford, K. R., & Sellers, R. M. (2010). Parental racial socialization profiles: Association with demographic factors, racial discrimination, childhood socialization, and racial identity. *Cultural Diversity & Ethnic Minority Psychology*, 16(2), 237–247. https://doi.org/10.1037/a0016111

Williams, C. D., Byrd, C. M., Quintana, S. M., Anicama, C., Kiang, L., Umaña-Taylor, A. J., Calzada, E. J., Pabón Gautier, M., Ejesi, K., Tuitt, N. R., Martinez-Fuentes, S., White, L., Marks, A., Rogers, L. O., & Whitesell, N. (2020). A lifespan model of ethnic-racial identity. *Research in Human Development*, *17*(2–3), 99–129. https://doi.org/10.1080/15427609.2020.1831882

Xiao, N. G., Wu, R., Quinn, P. C., Liu, S., Tummeltshammer, K. S., Kirkham, N. Z., Ge, L., Pascalis, O., & Lee, K. (2018). Infants rely more on gaze cues from own-race than other-race adults for learning under uncertainty. *Child Development*, *89*(3), e229–e244. https://doi.org/10.1111/cdev.12798

Yip, T. (2018). Ethnic/racial identity—A double-edged sword? Associations with discrimination and psychological outcomes. *Current Directions in Psychological Science*, *27*(3), 170–175. https://doi.org/10.1177/0963721417739348

Zubler, J. M., Wiggins, L. D., Macias, M. M., Whitaker, T. M., Shaw, J. S., Squires, J. K., Pajek, J. A., Wolf, R. B., Slaughter, K. S., Broughton, A. S., Gerndt, K. L., Mlodoch, B. J., & Lipkin, P. H. (2022). Evidence-informed milestones for developmental surveillance tools. *Pediatrics*, *149*(3), e2021052138. https://doi.org/10.1542/peds.2021-052138

CHAPTER 2: STUDY 1 – MAPPING RESEARCH ON EARLY ETHNIC-RACIAL AWARENESS DEVELOPMENT AMONG INFANTS AND TODDLERS: A SCOPING REVIEW

Introduction

The lifespan model of ethnic-racial identity (the lifespan model) offers a way to understand the evolution of ethnic-racial identity (ERI) starting with its origin and extending across all developmental periods of the human lifespan (Williams et al. 2020). The impetus for this work was to connect the "...relatively piecemeal approach [that] makes it difficult to chart continuity across developmental periods..." (Williams et al., 2020, p. 100). The resulting integrated model provides a helpful overarching framing for the construct of ERI. However, the lifespan model is also strengthened by in depth research on ERI that is focused within specific developmental periods. There is a need for both detailed ERI research within precise developmental periods, and a cohesive model that connects all developmental periods together. The lifespan model asserts that ERI is "...a process that begins in early infancy and progresses throughout late adulthood" (Williams et al., 2020, p. 101). When considering the initial phase of this development starting in early infancy and extending to age 3, it is important to situate the research within the connection between ERI and ethnic-racial socialization (ERS). The use of the term *ethnic-racial* is reflective of expansion in the field (Hughes et al., 2006; Markus, 2008). Many current scholars have shifted to use of the combined term, instead of racial and ethnic separately, to encapsulate the entirety of the construct (Doucet et al., 2018; Umaña-Taylor et al., 2014). This combined usage is seen in both ERI and ERS language. While closely connected ERI and ERS are unique constructs. ERI comprises the ways in which one perceives, describes, and values their personal ethnic-racial group membership (Umaña-Taylor et al., 2014), and how

individuals define their sense of self based on the ethnic and racial backgrounds with which they feel affiliated. Ethnic-Racial Socialization (ERS) refers to the messages that children receive regarding ethnicity and race" (Hughes et al., 2006; Quintana, 1998). These messages come from caregivers (e.g., parents, families, and educators), environments (e.g., home, neighborhood, school, geographic region), and media (e.g., books, toys, television, and technology tools; Williams et al. 2020). Through these socializing agents, children learn about common norms, values, and customs that may be related to both their own ERI and that of others (Hughes et al., 2006). ERI and ERS are connected in that the quality, frequency, and content of the ERS messages children receive directly impacts the way in which their ERI takes shape (e.g., Hughes et al., 2023).

The Lifespan ERI study group that developed the lifespan model also published a complimentary paper entitled, *Persistent concerns: questions for research on ethnic-racial identity development* (Rogers et al., 2020). In this paper, the authors addressed five persistent questions that emerged during the development of the lifespan model (Rogers et al., 2020). The first question was, "When does ERI development begin and end?" (Rogers et al., 2020, p. 131). The lifespan model defines the earliest stage of ERI development as "ethnic-racial priming" (Rogers et al., 2020, p. 105). While some exemplar studies are cited (e.g., Timeo et al., 2017), the extent to which ERI development has been studied in relation the ethnic-racial priming period is unclear. The first dimension of ERI development as "ethic-racial awareness [which] captures individuals' perceptions that ethnic-racial groups are categories with social meaningfulness, as well as individuals' perceptions about how ethnic-racial groups are viewed in society" (Rogers et al., 2020, p. 103). The dimension of ethnic-racial awareness presents differently across the lifespan with increased sophistication over time. Again, the extent to which

the initial emergence of ethnic-racial awareness has been studied among infants and toddlers is opaque. Given the relative ambiguity of ERI development research in the earliest developmental periods, there have been calls for additional research on ERI specifically within infancy and toddlerhood (e.g., Rogers et al., 2020; Ruck et al., 2021; Waxman, 2021).

The purpose of this study is to summarize and map what is known about the development of ethnic-racial awareness among children birth to 3 years of age and identify potential gaps in the present literature. Specifically, this study examines (1) how ethnic-racial awareness among infants and toddlers has been studied and (2) how caregivers' ethnic-racial socialization practices with infants and toddlers have been studied.

Method

The current study utilized a scoping review to systematically identify and analyze the existing literature on ethnic-racial awareness, and influences on this awareness among infants and toddlers. Scoping reviews are a method to examine the state of a topical research area that is new or emerging (Mays et al., 2001). Unlike other advanced evidence syntheses such as systematic reviews and meta-analyses, scoping reviews do not include in-depth evaluation of research quality, quantitative analyses of study results, or extensive analysis of implications for policy or practice (Arksey & O'Malley, 2005). Rather, they illuminate the breadth and depth of research in an area and identify existing gaps which may justify and guide more detailed systematic reviews or identify directions for further original research (Arksey & O'Malley, 2005). Further, scoping reviews offer a systematic way to demarcate and map a body of knowledge in order to identify key concepts and determine appropriate next steps in moving a body of research forward (Mays et al., 2001; Tricco et al., 2018).

While previous reviews have included literature on ethnic-racial awareness and potential influences, there is limited focus on children under the age of 3 years (e.g., Hughs et al., 2006; Priest et al., 2014; Raabe & Beelmann, 2011; Skinner & Meltzoff, 2018). Studies that do include infants and toddlers tend to emphasize child behavior that demonstrates the salience of ethnicity (e.g., looking time studies), yet the size and range of the research literature on the topic of ethnic-racial awareness and the factors that might influence variation of behavior among infants and toddlers specifically is unclear. Thus, a scoping review was selected as the methodology for this study. In addition to examining the literature to determine the current scope of research on the development of ethnic-racial awareness among infants and toddlers, this study also aimed to detect knowledge gaps in order to provide direction for future research on this topic.

The research team was comprised of five individuals, all of whom are co-authors of this study. At the time the study was conducted, two of the team members (including the first author) were doctoral students, two were faculty members, one was a post doc researcher, and the final team member was a research librarian. The personal ERI's of each team member are documented in Table 1.

Table 1

Ethnic-Racial Identities of Research Team Members

Research Team Member	Personal Ethnic-Racial Identity
Doctoral Student	Black-Biracial with West African and Northwestern European Ancestry
Doctoral Student	Korean
Post Doctoral Researcher	white Southern European
Associate Professor	white European American
Professor	white with Northwestern and Northcentral European Ancestry
Research Librarian	white European American

The development of the research approach was guided by the PRISMA extension for scoping reviews (Tricco et al., 2018) and the framework proposed by Arksey and O'Malley (2005). Our review process followed the stages recommended by Arksey and O'Malley:

Stage 1. Identifying the research question

Stage 2. Identifying relevant studies

Stage 3. Study selection

Stage 4. Charting the data

Stage 5. Collating, summarizing, and reporting the results

This scoping review is reported using the PRISMA-ScR and PRISMA-Searching guidance. An internal protocol was created but not registered.

Eligibility Criteria

The inclusion criteria used to determine which studies were included in this scoping review can be seen in Table 2.

Table 2

Inclusion Criteria and Descriptions

Inclusion Criteria	Descriptions
Published from January 1, 1990, through Present.	The last database search for this study was completed on March 6, 2023.
Published in the English language.	Included studies had to be available in the English language due to English being the primary language used by all research team members.
Focus on the development of ethnic-racial awareness among infants and toddlers.	Studies had to explicitly address how infants and toddlers develop conceptualizations of race and ethnicity, personal identity, visual categorization of people, in-group and out-group distinctions and preferences, and ethnic-racial familiarity.
Focused on understanding race and ethnicity in relation to infants and toddlers 0 to 3 years (36 mo. but not beyond).	When studies include children within this age range and older children, they were only included when age could be explicitly disaggregated in the results.
Published and unpublished empirical studies and review articles such as meta-analysis, and systematic reviews.	Studies in journal articles, books, and dissertations were included.

Table 2 (cont'd)

Descriptive and intervention studies using qualitative, quantitative, or mixed methods and had to include a direct measure of child behavior.	The research team was interested in including studies that provided parent-report data and included the results of direct child observations. The reason was to specifically look at variation in child outcomes in combination with parent report data. The research team was interested in accounting for observable differences that could be seen in child behavior compared to potential influences on variation within child behavior. Parent report measures were only acceptable when parents were trained as observers of child behavior.

Information Sources

An initial search was run June 10th and 11th 2021 in seven databases: PsycInfo (ProQuest), PsycArticles (ProQuest, bundled with PsycInfo), Web of Science Core Collection, ERIC (ProQuest), Education Source (EBSCO), Sociological Abstracts (ProQuest), Family and Society Studies (EBSCO). An updated search was run March 6th, 2023, in the same seven databases. The search strategies were designed, in consultation with the research team, by a research librarian who is a co-author of this study. Keywords selected captured the concepts of infants and toddlers, socialization, and race or ethnicity. The search string was as follows: (Infan* OR toddler* OR baby OR babies) AND (Sociali* OR recogni* OR identity OR preference OR raciali?ation OR bias OR perception OR attitude OR categor*) AND (race OR ethni* OR racial). This search string was intended to capture any study that explicitly addressed how infants and toddlers develop conceptualizations of race, ethnicity, personal identity, visual categorization of people, in-group/out-group distinctions or preferences, and ethnic-racial bias.

Search Strategy

Keywords were searched for in the titles and abstracts. Depending on the database, appropriate controlled vocabulary terms were selected from each database's thesaurus. Results were limited to articles from January 1, 1990, through March 6, 2023. No other limits were applied. Individual search strategies for each database can be found in Appendix A. This search

yielded 7,059 citations. 1,613 duplicates were removed using the web-based research platforms Covidence and Zotero.

Citation chaining was performed on 8 seminal papers using the reference lists and Scopus or Google Scholar, which resulted in 2,049 citations. 190 duplicates were removed. The manual process of looking through relevant journals to identify papers that met inclusion criteria known as hand searching (Richards, 2008) added an additional 9 papers. After the removal of one duplicate, 1,868 papers were added for the screening of citations via other methods. Two additional organizations, the National Black Child Development Institute, and the Abolitionist Teaching Network, were included in the pilot search, but were not found to have enough applicable information to be included in the final search. The complete PRISMA 2020 Flow Diagram is shown in Figure 2.

Selection of Evidence

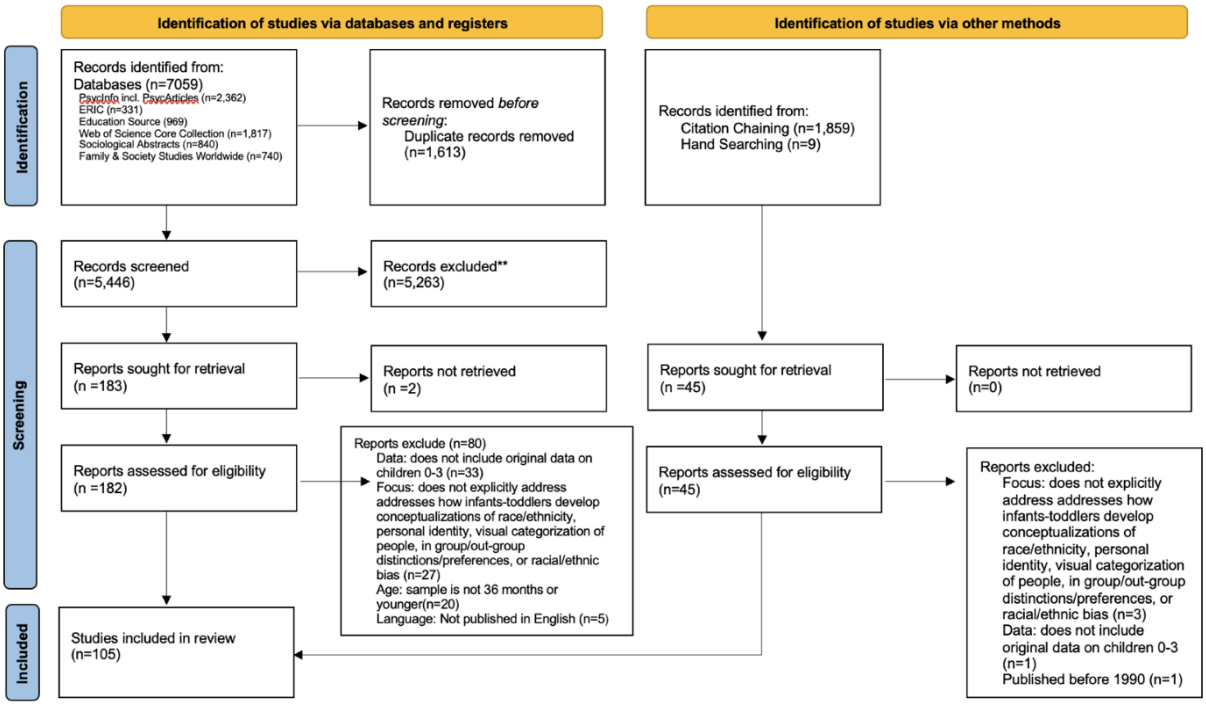
A minimum of two research team members independently reviewed all titles and abstracts that were identified through the formal search process. Inclusion and exclusion criteria were used to select studies for full review. Any discrepancies in inclusion and exclusion criteria application were resolved by team discussion and consensus. Next, a minimum of two research team members independently reviewed the full text for all studies that were included after the title and abstract review. The same processes for applying inclusion and exclusion criteria and resolving discrepancies were utilized at this stage. After this screening process and the removal of duplicates between the search methods, 105 papers were included in the final analysis (see Appendix B).

Data Charting Process

The Covidence platform was utilized for screening and coding research studies published between January 1, 1990, and March 6, 2023. Covidence is designed to streamline the process of systematic reviews. This platform allows for independent coding by multiple reviewers, resolving coding conflicts by consensus, and populating coding results into a spreadsheet format. For the current study, Covidence was utilized in three phases. First, all reviewers independently screened the titles and abstracts that were identified through keyword database searchers and hand searching.

Figure 2

PRISMA 2020 Flow Diagram



Second, reviewers independently applied inclusion and exclusion criteria to full articles identified after the initial screening phase. Lastly, full articles that met all inclusion criteria were coded independently by reviewers. An internally developed coding form was utilized to code all

included studies. During the coding process, the research team identified papers that presented more than one individual study, i.e., those that reported multiple experiments with different samples within a single paper. When multiple studies were identified within a single paper, each study was coded separately. 168 unique studies were coded from within the 105 papers included in the sample.

Data Items

Variables were coded at either the paper or the study level using a "check all that apply" coding approach. (see Table 3). Coding completed at the paper level included the entire journal article, book chapter, or dissertation, while coding at the unique study level included each separate experiment within an included journal article, book chapter, or dissertation. Type of publication, publication year, and discussion of potential influences on variation in the development of ethnic-racial awareness among infants and toddlers were all variables coded at the paper level. The following variables were coded at the unique study level: study design, study setting, geographic location, sample demographics, study method, stimuli, outcome measures, and results. Additionally, the usage of any tools to measure influences on the development of ethnic-racial awareness among infants and toddlers or ethnic-racial socialization practices among their caregivers was also coded at the study level. Conflicts between independent coders were resolved by consensus during each phase.

Table 3

Coded Categorical Variables

Variables coded at the paper level (n = 105) to answer RQ1		
Variable	Categories Coded	Number of Studies
Type of publication	Peer Reviewed Journal article	97
	Dissertation	5
	Open Access Journal article	2

Table 3 (cont'd)

	Book chapter	1
Year of publication	1990 –2023	see Figure 3

Variables coded at the study level (n = 168) to answer RQ1

Variable	Categories Coded	Number of Studies
Geographic location	Region of country or name of state or province if available	see Figure 3
Study design	Randomized experimental study	129
	Quasi-experimental study	30
Variable	Categories Coded	Number of Studies
	Intervention study	4
	Naturalistic observational study	4
	Qualitative study	1
Study method	Single Age or short age range study	105
	Cross sectional study	50
	Longitudinal study	13
Study setting	Lab	158
	Home	8
	Other	2
Number of participants	16–213	M = 53 (SD = 38)
Race and Ethnicity of participants	Black	see Figure 4
	Asian	
	Native	
	Latiné or Latinx	
	white	
	Multiracial	
Age of participants (in months)	Newborn to 36-months	see Figure 5
Stimuli	Still face images	96
	Language	51
	Videos	32
	Actors	14
	Dynamic Images	19
	Toys, Objects, or Food	5
	Food	5
Outcome measures	Looking Time: length of time spent looking at stimuli or Eye Gaze: specific area where gaze is focused	134
	Object Choice: child choosing a toy or object Food Choice: child choosing a food	14
	Brain Activity: any measurement of brain activity	8

Table 3 (cont'd)

	Imitation: child consciously imitating another (e.g., lifting arms up)	4
	Mimicry: child subconsciously mimicking another (e.g., pupil size changing)	3
	Both Looking Time and Brain Activity	5
Results	Demonstrated capacity to distinguish others based on phenotypic features or language	133
	Demonstrate in-group familiarity when distinguishing others	100
	Demonstrate out-group interest	17
Results	Distinguish differences without demonstrating familiarity or preference for either an out-group or an in-group	18

Variables coded at the study level for studies that did not include in-group stimuli (n = 24) to answer RQ1

Variable	Categories Coded	Number of Studies
Results	Distinguish between groups using other characteristics such as facial attractiveness, language, and shared features (i.e., clothing color)	20
	Did not distinguish between groups using other characteristics	2

Variables coded at the paper level (n = 105) to answer RQ3

Variable	Categories Coded	Number of Studies
Discussion of Ethnic-Racial Socialization Influences	Not Applicable because Ethnic-Racial Socialization Factors were not Discussed	52
	Exposure to Other-Race Individuals	39
	Exposure to Other Languages	9
	Exposure to Diverse Materials (e.g., books, toys)	1
	Exposure to Diverse Media (e.g., television shows, apps)	0
	Exposure to Diverse Cultural Experiences (e.g., food, music, celebrations)	0
	Other (living in neighborhoods that are ethnically and racially diverse or linguistically diverse based on census data)	4
Ethnic-Racial Socialization Measures (Name and description of measurement tool used)	Non-validated, parent questionaries	14
	Census data	4
	Language Exposure Questionnaire Bosch & Sebastian-Galles, 1997	5

Table 3 (cont'd)

	Scale adapted from Brown et al. (1999) assessing participants familiarity with African people	1
	Infant-Individual Interaction Scale	1
	Infant-Caregiver and Family Member Interaction Scale	1

Findings

The final analysis included 105 papers published between January 1990 and March 2023. Included papers reported on a total of 168 unique studies. Included studies explicitly address how infants and toddlers (birth to age 3) use visual and auditory stimuli to categorize others, develop conceptualizations of in-group and out-group distinctions, and establish ethnic-racial familiarity.

How has ethnic-racial awareness among infants and toddlers been studied?

Publication Type, Publication Year, and Study Location

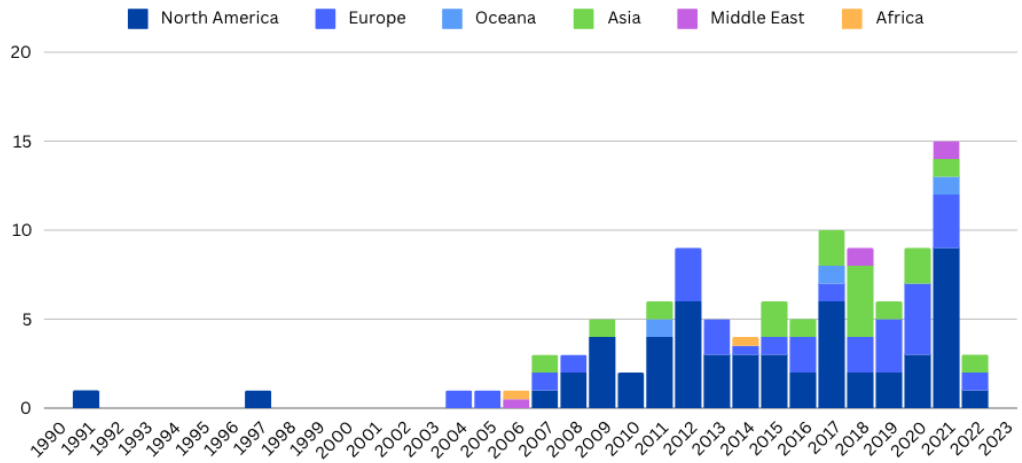
Out of the 105 included papers, 93% (*n* = 97) were articles published in peer reviewed journals. Five dissertations, 2 open access journal articles, and 1 book chapter were also included. Findings for the paper publication year demonstrate how interest in this research topic has grown in recent years. Only 11 papers meeting the inclusion criteria for this scoping review were published during the first 19 years (between January 1990 and December 2008) of this scoping review's 34-year range. The number of relevant studies began to increase in 2009 with 94 papers meeting the inclusion criteria published between January 2009 and March 2023.

The vast majority of studies were conducted in the U.S. (*n* = 76) followed by Canada (*n* = 21), Germany (*n* = 14), the UK (*n* =13), China (*n* = 10), France (*n* = 8), Japan (*n* = 6), Singapore (*n* = 5), and Israel (*n* = 5). A smaller number of studies were conducted in the following countries: Australia (*n* = 3), Spain (*n* = 2), Netherlands (*n* = 2), Ethiopia (*n* = 1), Cameroon (*n* =

1), and Taiwan (n = 1). Two studies included participants from more than one country within their sample populations; one study was conducted in both Germany and Cameroon, and another study was conducted in both Israel and Ethiopia. As seen in Figure 3, these findings reveal the disproportionate focus of this research in Western countries.

Figure 3

Publication of Included Studies by Year and Geography



Study Design and Research Method

The majority of the 168 included studies utilized randomized experimental designs (n = 129). Fewer studies used quasi-experimental designs (n = 30), interventions (n = 4), naturalistic observation (n = 4), and qualitative designs (n = 1). Nearly all studies were conducted in lab settings (n = 158), with 8 additional studies taking place in the home setting and 2 studies being conducted in a school setting.

While 50 studies used a cross-sectional approach, most studies included a single age or a single short age range for their sample (n = 105), and only 8% of studies utilized a longitudinal design (n = 13). Among the few longitudinal studies, 62% had samples that included only white

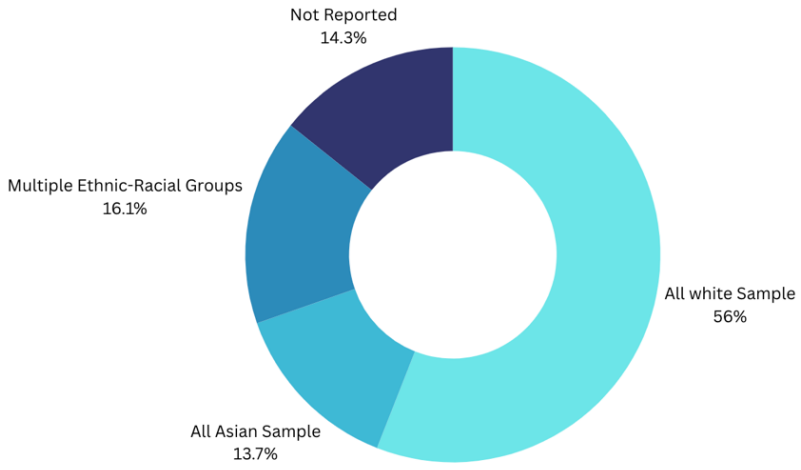
participants, and only 3 studies included toddlers. All three of these studies were published by Katz and colleagues in the 1997 book: *Race, gender and young children*.

Sample Demographics

The average sample size among included studies was 53 (*SD* = 38) participants with the smallest sample size being 16 participants and the largest sample size being 213 participants. Most studies included sample populations from single ethnic-racial groups (*n* = 117), and the majority involved white participants exclusively (*n* = 94), followed by Asian participants exclusively (*n* = 23). A smaller number of studies included multiple ethnic-racial groups (*n* = 27), and only 10 studies included biracial or Multiracial participants in their samples. Of the studies that did not report the ethnic-racial demographics of their sample populations (*n* = 24), all were conducted in countries with majority white populations: the USA (*n* = 18), the UK (*n* = 3), Spain (*n* = 2), and Germany (*n* = 1). These study locations suggest that the sample populations were likely all or majority white (Figure 4).

Figure 4

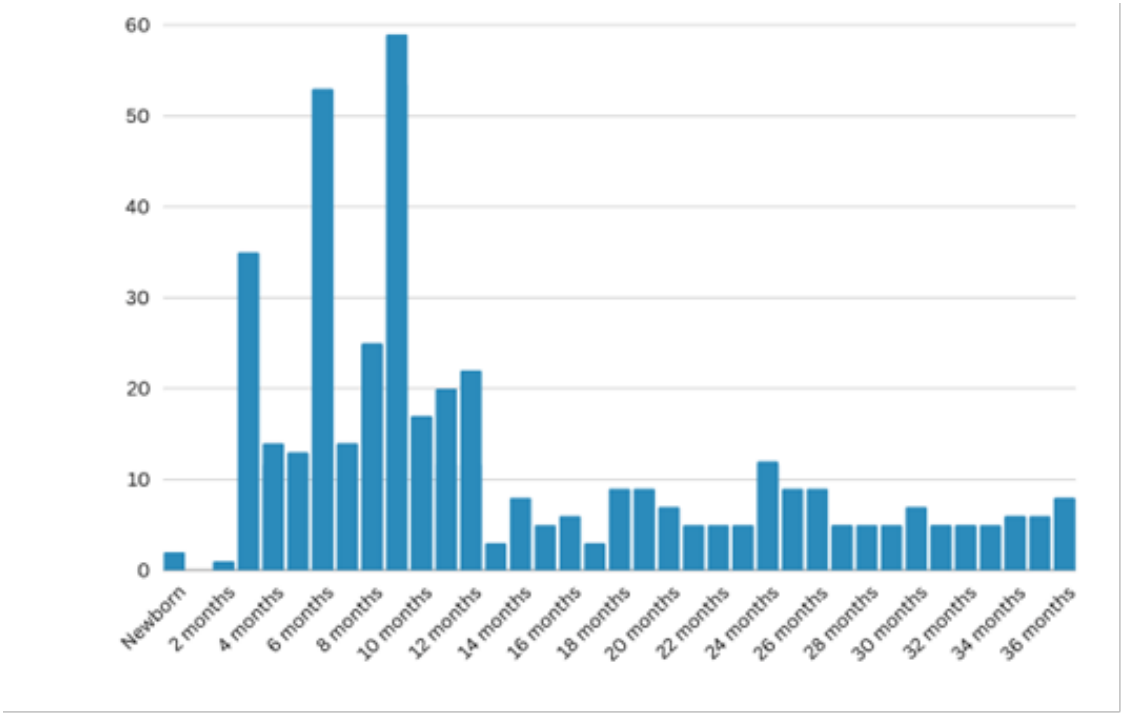
Ethnic-Racial Diversity Among Study Samples



Further, infants were more likely to be included in the study samples compared to toddlers. Children 12 months of age and younger were included in the majority of the studies (n = 134) compared to the number of studies that included toddlers ages 13 months to 36 months (n = 30). Only four studies included both children 12 months or younger and children 13 months to 36 months of age. The most common age of study participants was 9 months (n = 59) followed by 6 months (n = 53), and 3 months (n = 35). A full summary of the ages included in the sample populations can be seen in Figure 5.

Figure 5

Number of Studies Including Each Age Group



Stimuli and Outcome Measures

The majority (n = 124) of the 168 individual studies examined how infants distinguish others based on observable, phenotypic differences such as skin tone, facial features, and emotional expressions. An additional 27 studies examined how infants and toddlers distinguish

others based on language and accent, and 17 studies included both observable, phenotypic differences and language or accent differences as examined variables. While some may think of language as separate from the constructs of ethnic-racial awareness and ethnic-racial identity, it is widely considered to be a significant element of ethnic-identity among many ethnic-racial groups (e.g., DeJesus et al., 2019).

Still face images were used as stimuli in most of the studies (n = 96) followed by vocal or sound stimuli (n = 51). Other stimuli included videos (n = 32), dynamic facial images (n = 19), live actors (n = 14), and objects such as toys or food (n = 5). The vast majority of studies utilized looking time as an outcome measure (n = 134). Some studies measured brain activity (n = 8), and 5 studies used both looking time and brain activity as the outcome measures. Other studies used object choice (n = 14), and fewer studies used behavior imitation (n = 4) or pupil dilation mimicry (n = 3) as outcome measures. Less frequently, studies have examined children's object choices and behavior (10%), brain activity (4%), behavior imitation (2%), and pupil dilation mimicry (2%) as responses indicating development of ethnic-racial awareness.

Study Results

The variable categories for results included ability to distinguish faces based on distinct features, same-race familiarity or preference, other-race familiarity or preference, ability to distinguish between own-language and other-language, same-language familiarity or preference, or anticipation of behavior based on in-group or out-group membership. Most included studies reported average findings for the whole sample with little attention paid to individual differences or potential influences on or predictors of variation in the development of early ethnic-racial awareness. However, potential predictors of variation can be detected when looking across the sample characteristics of included studies, most predominantly, age.

Of the 168 included studies, only 9 studies did not demonstrate infant and toddler capacity to distinguish others based on phenotypic features or language. Two of these studies were conducted with newborns suggesting that the capacity to distinguish people based on different facial features is not present at birth (Kelly et al., 2005; Quinn et al., 2008). Two additional studies from Kinzler and colleagues (Kinzler & Spelke, 2011) showed that white 10-month-olds equally gave a toy to a Black or a white actor, and white 2.5–3-year-olds equally gave a gift to a Black or a white actor. Similarly, Castelli and colleagues found that white 1-to-2-year-olds took food equally from a Black or white person, but white 3–4-year-olds were more likely to take food from a white person (Castelli & Carraro, 2020). Taken together, these findings suggest that age is one influence on variation in the development of ERI awareness.

A study by Hayden and colleagues (2012) showed that white 3.5-month-olds were not able to discriminate between own-race and other-race faces when the facial images were inverted. This result seemed to be related to the way the faces were displayed as participants were able to discriminate between the same own-race and other-race facial images when they were not inverted. (Hayden et al., 2012). Thus, the quality and context of exposure may be another influence on variation in the development of ERI awareness.

The final three studies in this category demonstrated conflicting findings compared to other studies with similar samples and designs. In a 2014 study by Howard and colleagues, 19-month-old native English speakers did not show imitation preferences between English or Spanish speaking actors (Howard et al., 2014). A 2017 study found that 4–12-month-old infants did not show preferential looking time toward images of same and other race faces (Montoya et al., 2017). Finally, a study by Xiao and colleagues showed that 7-month-olds followed the gaze of same and other-race adults equally when they were 100% reliable (Xiao et al., 2018). The

results of these three studies demonstrate the need to continue exploring the differences in context and variables that impact the development of ethnic-racial awareness among infants and toddlers.

Results for Studies that Included In-Group Stimuli

Of the 144 studies that included in-group stimuli (stimuli with features such as skin color or language that are the same as participants), most (n = 133) demonstrated that infants and toddlers are able to distinguish others based on differences they observe (i.e., phenotypic features) or hear (i.e., language or accent). Further, the majority of studies that included in-group stimuli demonstrated that infants and toddlers display in-group familiarity (e.g., higher proportion of looking time when encountering in-group stimuli) when distinguishing others (n = 100).

While most studies demonstrated that infants and toddlers are more drawn to faces and languages that are most familiar to them, fewer studies demonstrated that infants and toddlers display out-group interest (e.g., higher proportion of looking time when encountering out-group stimuli) when presented with both in-group and out-group stimuli (n = 17). Additionally, 18 studies showed that infants and toddlers can distinguish differences even though they do not demonstrate familiarity or preference for either an out-group or an in-group (e.g., looking time indicates ability to distinguish difference, but proportion of looking time is relatively equal toward both in-group and out-group stimuli). This group of studies highlights the need for additional research that explores influences that may be associated with variation in how young children respond to people who represent out-groups.

Results for Studies that Did Not Included In-Group Stimuli

Some studies did not include in-group stimuli (n = 24). Among these studies, most (n = 22) had results that demonstrated infants and toddlers' ability to distinguish between groups using other characteristics such as facial attractiveness, language, and shared features (i.e., clothing color). Two of the studies that did not include in-group stimuli reported that participants were not able to distinguish between groups using other characteristics. One of these studies used facial images of two other-race groups (Black and Asian) as stimuli. After being habituated to select Black and Asian faces, white 9-month-olds who were habituated to select Black faces were not able to distinguish a novel Asian face (Quinn et al., 2015). Likewise, the infants did not demonstrate the ability to distinguish a novel Black face if they were habituated to Asian faces (Quinn et al., 2015). These findings suggest that the participating infants may have perceived both Black and Asian faces as a single other-race group (Quinn et al., 2015). However, the results of this particular experiment were null, which makes interpretation unclear (Quinn et al., 2015).

Another study that demonstrated an inability of participants to distinguish between groups used animated geometric objects as the stimuli (Powell & Spelke, 2013). The objects represented belonging to distinct groups based on having similar features. The objects were also presented with different features, colors and shapes (Powell & Spelke, 2013). While an outlier since the study did not use human faces as the stimuli, this study met inclusion criteria as it involved direct measures of infant categorizing behavior based on visual perception and measured by looking time (Powell & Spelke, 2013). Other studies within the same paper, found that when identical objects (e.g., same color and shape) were paired with other social cues such as proximity on the screen and synchronous movement, 8-month-olds could distinguish the

groups, and they demonstrated anticipation of similar behavior based on group membership. However, the infants did not demonstrate this ability to distinguish groups in one study where the social cues such as proximity and synchronous movement were absent. (Powell & Spelke, 2013). While providing interesting information related to how infants determine group membership and predict group behavior, this particular set of studies is inconsistent with the others in its use of animated geometric objects as stimuli.

Ethnic-Racial Socialization Measures

Influences on the development of ethnic-racial awareness among infants and toddlers have primarily been studied using non-validated questionnaires that ask caregivers to indicate infant and toddler exposure to other ethnic-racial groups (n = 39) and other languages (n = 9). Ethnic-racial diversity (n = 3) and linguistic diversity (n = 1) of geographic locations based on census data have also been used to measure possible influences.

How have caregivers' ethnic-racial socialization practices with infants and toddlers been studied?

In this scoping review, ERS messages were considered a potential influence of variation in ERI awareness development among infants and toddlers. We specifically coded for whether or not ERS influences were mentioned in the discussion, implications, or conclusion sections of included papers. The search string used for this scoping review included: (Infan* OR toddler* OR baby OR babies) AND (Sociali* OR recogni* OR identity OR preference OR raciali?ation OR bias OR perception OR attitude OR categor*) AND (race OR ethni* OR racial). The breadth of this search string ensured that all papers addressing ERS of infants and toddlers were identified. ERS influences mentioned were only coded if they were presented as factors that could explain variation in the study outcomes. The coding protocol also included recording any

specific methods or assessment tools used to measure ERS socialization or ERS influences. If socialization influences were measured, the name or description of the measurement tool(s) was documented on the coding protocol.

Findings from this scoping review demonstrate that engagement in ERS practices among caregivers of infants and toddlers has generally not been studied. In fact, no studies in this scoping review included organic engagement in ERS practices as a variable of interest, and only one study (Heron-Delaney et al., 2011) involved caregiver engagement in intentional exposure to other-race images as part of the study design. While no papers in our sample provided direct examples of caregiver engagement in ERS, there were two promising findings that could inform future intervention work. A longitudinal study conducted by Heron-Delaney and colleagues in 2011 found that the ability to discriminate between other-race faces was retained among white infants after they were regularly exposed to a set of books showing diverse faces between 6-and-9-months of age (Heron-Delaney et al., 2011). Similarly, Anzures and colleagues found that 8- to 10-month-old white infants who had daily experience with Asian faces over three weeks were less likely to demonstrate perceptual narrowing with respect to Asian faces (Anzures et al., 2012). Both studies provide possible directions for investigating how the development of ethnic-racial bias might be disrupted during the infant and toddler years.

Discussion

Present State of Research

Findings from this scoping review demonstrate that ethnic-racial awareness among infants and toddlers has been studied with increased frequency in recent years. Research conducted to date provides substantial evidence supporting the developmental relevance of ethnic-racial awareness among infants and toddlers with 92% of studies demonstrating the ability

to differentiate others based on phenotypic differences in visual and auditory features, as well as evidence of in-group familiarity. Further, 69% of studies that included in-group stimuli indicated that infants and toddlers demonstrate in-group (e.g., ethnicity, race, language, culture) familiarity.

In terms of study design, randomized experimental designs in lab settings with looking time as the most dominant behavioral measure have been the most used methodologies. While lab-based studies allow for the establishment of a more controlled study environment, the lack of studies that take place in more naturalistic settings, and the near complete omission of qualitative methods limits our understanding of how ethnic-racial awareness emerges and is expressed among young children within the context of daily life. Use of still face images and looking-time behavior provides consistent standardization; however, it is important to note that infants and toddlers will primarily interact with others in dynamic ways that may not be best reflected by the static images of photographs.

This scoping review also illuminated a remarkable gap in terms of examining ethnic-racial awareness and developmental influences among infants from minoritized populations and among toddlers (13–36 months). The sample populations in the included studies were overwhelmingly White children who were 12 months of age or younger. The imbalance of ethnic-racial diversity among included study samples and the limited inclusion of toddlers demonstrates that the findings within this body of research to date primarily measure outcomes for white infants. Further, the majority of studies were conducted in what Henrich and colleagues refer to as WEIRD societies – Western, Educated, Industrialized, Rich, and Democratic (Henrich et al., 2010). Thus, there is a gap in what is known about the development of ethnic-racial awareness among infants and toddlers in the global south.

Findings also demonstrate an absence of studies examining early anti-bias interventions and ethnic-racial socialization practices among caregivers of infants and toddlers. While not all studies demonstrated infant and toddler capacity to distinguish others based on race, prior research does suggest that a bias toward whiteness may not be prominent in infants and toddlers but has been observed in the preschool and early elementary years (Castelli & Carraro, 2020; Kinzler & Spelke, 2011). This implies that efforts to disrupt the development of harmful bias among young children may have a window of opportunity in the infant and toddler years. Meaningful evaluation of interventions will require longitudinal study designs; however, few studies employed longitudinal designs (n = 13) and less than 2% of the included longitudinal studies included toddlers in their sample.

Implications for Research

This scoping review confirmed that ethnic-racial awareness emerges in infancy. While this was already known, results from this scoping review explicitly demonstrate that this knowledge is primarily based on findings from looking time studies done with very young, white, infants. Looking time studies do not replicate the dynamic interactions infants have with people in their environments. Thus, there is a need for future research to focus on the inclusion of observational studies that are conducted in settings that more closely mimic the natural environment of infants and mirror the ways in which they engage with individuals in those environments. Naturalistic observation methods are vital when studying young children before they acquire verbal language and pointing skills (Marcella & Howes, 2015). Additional emphasis on research in naturalistic settings could also support more understanding of individual differences in ethnic-racial awareness, familiarity, and preferences among children birth to 3 years old. which might be best explored in naturalistic settings.

There is also a need to increase the ethnic-racial diversity of participants when studying ethnic-racial awareness and developmental influences among infants and toddlers. The U. S. population is simultaneously increasing in ethnic-racial diversity and demonstrating more ethnic-racial bias. Experts predict that Gen Z will be the last generation that is majority white in the United States (Frey, 2023). Further, the Multiracial population is a rapidly expanding demographic group (Nishina & Witcow, 2019). This is especially evident among child population in the United States (Lopez et al., 2015). Continuing to conduct this research primarily with populations that are exclusively white or only including single ethnic-racial groups in study samples severely limits the expansion of knowledge in the field. This scoping review demonstrated that even when study participants are not from only one ethnic-racial demographic group, samples that include two ethnic-racial demographic groups are typically comprised of participants who are white and participants who are Black. Given the shifting demographics globally and specifically in the U.S. context, this dyadic approach is outdated and incomplete. Additional ethnic-racial groups should be included in future research with greater frequency. This need is especially notable with Multiracial populations.

Further, findings illuminated that the toddler age group is under-represented in the ethnic-racial awareness development literature. The fact that toddlers are not frequently included in samples of studies on this topic excludes a key period along the developmental continuum. This is especially problematic given that the second year of life is characterized by the emergence of a sense of self as distinct from others (Rochat, 2003). Future research would benefit from a more purposive inclusion of toddler participants between 12 and 36 months of age.

Finally, there is a clear need for future research to better measure the ethnic-racial socialization practices that caregivers of infants and toddlers engage in and their impact on child

development. While data on potential developmental influences on ethnic-racial awareness (such as exposure to ethnically and racially diverse individuals) are being collected through parent report, there is a lack of valid measures to examine ERS practices and outcomes with the infant and toddler age group. Future research should investigate what types of ERS infants and toddlers are being exposed to at what levels and how they are responding. Along with the use of validated measures, more longitudinal intervention studies will be needed to understand the impact of ERS on infants and toddlers and to test the results of interventions designed to promote healthy ethnic racial identity and disrupt the development of ethnic-racial bias in the earliest years.

Limitations

While providing an important summary of the extant literature on early ethnic-racial awareness and developmental influences among infants and toddlers, this scoping review also had some limitations. First, the search was done with databases that focused on psychological research, and did not include research that may have been done in other social sciences relevant to this topic, such as anthropology. The specific time frame is also a limitation. Results from this scoping review include papers published from January 1, 1990, through March 6, 2023. Any studies examining the developmental relevance of ethnicity and race among infants and toddlers that have been published after that point are not included in this scoping review.

A scoping review is limited by design and does not include statistical analysis. This methodology is not intended to synthesize results nor appraise the quality of included evidence (Arksey & O'Malley, 2005), but rather, to offer a first step toward a synthesized understanding of a burgeoning research area. Within these limitations, this scoping review described the scope of foundational knowledge on early ethnic-racial awareness and identified several specific gaps that can be used to inform future research.

Conclusions

The goal of this scoping review was to systematically identify and analyze the existing literature on ethnic-racial awareness and influences on its development among infants and toddlers. Ethnicity and race are clearly salient to infants and toddlers, and current research suggests that the first three years of life may provide a unique developmental window during which intentional ERS practices may be highly influential. Yet, how caregivers might intentionally practice ERS in the earliest years and the results of those practices on individual differences in development might produce are essentially unexplored areas of research.

There is a need for more research to clarify how much infants and toddlers can distinguish between and associate meaning with different ethnic-racial identities. Moreover, additional studies are needed to identify the specific developmental trajectory of ethnic-racial awareness in association with age and individual differences that might be predicted by measurable influences. These gaps should serve as guidance for future systematic reviews and research studies on this topic.

REFERENCES

Anzures, G., Wheeler, A., Quinn, P. C., Pascalis, O., Slater, A. M., Heron-Delaney, M., Tanaka, J. W., & Lee, K. (2012). Brief daily exposures to Asian females reverses perceptual narrowing for Asian faces in Caucasian infants. *Journal of Experimental Child Psychology*, *112*(4), 484–495. https://doi.org/10.1016/j.jecp.2012.04.005

Arksey, H., & O'Malley, L. (2005). Scoping studies: Towards a methodological framework. *International Journal of Social Research Methodology*, *8*(1), 19–32. https://doi.org/10.1080/1364557032000119616

Castelli, L., & Carraro, L. (2020). No evidence of racial discrimination among toddlers. *Psicologia Sociale*, *15*(2), 285–292. https://doi.org/10.1482/96849

Crisp, T., Knezek, S. M., Quinn, M., Bingham, G. E., Girardeau, K., & Starks, F. (2016). What's on our bookshelves? The diversity of children's literature in early childhood classroom libraries. *Journal of Children's Literature*, *42*(2), 29–42.

DeJesus, J. M., Liberman, Z., & Kinzler, K. D. (2019). Early Origins of Identity: Infants' and Children's Thinking About Language and Culture. *Zero to Three*, 39(3), 10–16.

Hayden, A., Bhatt, R. S., Kangas, A., Zieber, N., & Joseph, J. E. (2012). Race-based perceptual asymmetry in face processing is evident early in life. *Infancy*, *17*(5), 578–590. https://doi.org/10.1111/j.1532-7078.2011.00098.x

Henrich, J., Heine, S. J., & Norenzayan, A. (2010). The weirdest people in the world? *Behavioral and Brain Sciences*, *33*(2–3), 61–83. https://doi.org/10.1017/S0140525X0999152X

Heron-Delaney, M., Anzures, G., Herbert, J. S., Quinn, P. C., Slater, A. M., Tanaka, J. W., Lee, K., & Pascalis, O. (2011). Perceptual training prevents the emergence of the other-race effect during infancy. *PLOS ONE*, *6*(5), e19858. https://doi.org/10.1371/journal.pone.0019858

Howard, L. H., Carrazza, C., & Woodward, A. L. (2014). Neighborhood linguistic diversity predicts infants' social learning. *Cognition*, *133*(2), 474–479. https://doi.org/10.1016/j.cognition.2014.08.002

Hughes, D., Rodriguez, J., Smith, E. P., Johnson, D. J., Stevenson, H. C., & Spicer, P. (2006). Parents' ethnic-racial socialization practices: A review of research and directions for future study. *Developmental Psychology*, 42(5), 747–770. https://doi.org/10.1037/0012-1649.42.5.747

Hughes, D., Cox, B., & Das, S. (2023). Growing up, learning race: An integration of research on cognitive mechanisms and socialization in context. *Annual Review of Developmental Psychology*, 5(Volume 5, 2023), 137–167. https://doi.org/10.1146/annurev-devpsych-120321-015718

Katz, P. A., & Kofkin, J. A. (1997). Race, gender, and young children. In *Developmental psychopathology: Perspectives on adjustment, risk, and disorder* (619144828; 1997-08446-003; pp. 74, Chapter xxi, 618 Pages). Cambridge University Press, New York, NY.

Kelly, D., Quinn, P., Slater, A., Lee, K., Gibson, A., Smith, M., Ge, L., & Pascalis, O. (2005). Three-month-olds, but not newborns, prefer own-race faces. *Developmental Science*, *8*(6), F31–F36. https://doi.org/10.1111/j.1467-7687.2005.0434a.x

Kinzler, K. D., & Spelke, E. S. (2011). Do infants show social preferences for people differing in race? *Cognition*, *119*(1), 1–9. https://doi.org/10.1016/j.cognition.2010.10.019

Lopez, K. P., Juliana Menasce Horowitz, Rich Morin and Mark Hugo. (2015, June 11). *Multiracial in America*. Pew Research Center. https://www.pewresearch.org/social-trends/2015/06/11/multiracial-in-america/

Marcella & Howes (2015). Using naturalistic observation to study children's engagement in early childhood classrooms. In Saracho. *Handbook of Research Methods in Early Childhood Education.* (Volume 2: Review of Research Methodologies. pp. 25-53). IAP.

Markus, H. R. (2008). Pride, prejudice, and ambivalence: Toward a unified theory of race and ethnicity. *American Psychologist*, *63*(8), 651–670. https://doi.org/10.1037/0003-066X.63.8.651

Mays, N., Roberts, E., & Popay, J. (2001). *Synthesizing research evidence* (N. Fulop, P. Allen, A. Clarke, & N. Black, Eds.; pp. 188–220). Routledge. https://researchonline.lshtm.ac.uk/id/eprint/15408/

Montoya, L., Westerlund, A., Troller-Renfree, S., Righi, G., & Nelson, C. A. (2017). The effect of heterogeneous race exposure during infancy. *Cognitive Development*, *42*(SI), 74–83. https://doi.org/10.1016/j.cogdev.2017.02.014

Powell, L. J., & Spelke, E. S. (2013). Preverbal infants expect members of social groups to act alike. *Proceedings of the National Academy of Sciences*, *110*(41), E3965–E3972. https://doi.org/10.1073/pnas.1304326110

Priest, N., Walton, J., White, F., Kowal, E., Baker, A., & Paradies, Y. (2014). Understanding the complexities of ethnic-racial socialization processes for both minority and majority groups: A 30-year systematic review. *International Journal of Intercultural Relations*, 43. https://doi.org/10.1016/j.ijintrel.2014.08.003

Quinn, P. C., Lee, K., Pascalis, O., & Tanaka, J. W. (2015). Narrowing in categorical responding to other-race face classes by infants. *Developmental Science*, *19*(3), 362–371. https://doi.org/10.1111/desc.12301

Quinn, P. C., Uttley, L., Lee, K., Gibson, A., Smith, M., Slater, A. M., & Pascalis, O. (2008). Infant preference for female faces occurs for same-but not other-race faces. *Journal of Neuropsychology*, *2*(1, SI), 15–26. https://doi.org/10.1348/174866407X231029

Quintana, S. M. (1998). Children's developmental understanding of ethnicity and race. A*pplied & Preventive Psychology*, 7(1), 27–45. http://dx.doi.org.proxy2.cl.msu.edu/10.1016/S0962-1849(98)80020-6

Raabe, T., & Beelmann, A. (2011). Development of ethnic, racial, and national prejudice in childhood and adolescence: A multinational meta-analysis of age differences: Age differences in prejudice. *Child Development*, 82(6), 1715–1737. https://doi.org/10.1111/j.1467-8624.2011.01668.x

Richards, D. (2008). Handsearching still a valuable element of the systematic review. E*vidence-Based Dentistry*, 9(3), 85. https://doi.org/10.1038/sj.ebd.6400602

Rochat, P. (2023). Five levels of self-awareness as they unfold early in life. *Consciousness and Cognition, 12*(4),717–731. https://doi.org/10.1016/S1053-8100(03)00081-3

Rogers, L. O., Kiang, L., White, L., Calzada, E. J., Umaña-Taylor, A. J., Byrd, C., Williams, C. D., Marks, A., & Whitesell, N. (2020). Persistent concerns: Questions for research on ethnic-racial identity development. *Research in Human Development*, 17(2–3), 130–153. https://doi.org/10.1080/15427609.2020.1831881

Ruck, M. D., Hughes, D. L., & Niwa, E. Y. (2021). Through the looking glass: Ethnic racial socialization among children and adolescents. *Journal of Social Issues*, *77*(4), 943–963. https://doi.org/10.1111/josi.12495

Skinner, A. L., & Meltzoff, A. N. (2019). Childhood experiences and intergroup biases among children. *Social Issues and Policy Review*, 13(1), 211–240. https://doi.org/10.1111/sipr.12054

Timeo, S., Farroni, T., & Maass, A. (2017). Race and color: two sides of one story? Development of biases in categorical perception. *Child Development*, 88(1), 83–102. https://doi.org/10.1111/cdev.12564

Tricco, A. C., Lillie, E., Zarin, W., O'Brien, K. K., Colquhoun, H., Levac, D., Moher, D., Peters, M. D. J., Horsley, T., Weeks, L., Hempel, S., Akl, E. A., Chang, C., McGowan, J., Stewart, L., Hartling, L., Aldcroft, A., Wilson, M. G., Garritty, C., … Straus, S. E. (2018). PRISMA extension for scoping reviews (PRISMA-ScR): Checklist and explanation. *Annals of Internal Medicine*, *169*(7), 467–473. https://doi.org/10.7326/M18-0850

Umaña-Taylor, A. J., Quintana, S. M., Lee, R. M., Cross Jr., W. E., Rivas-Drake, D., Schwartz, S. J., Syed, M., Yip, T., Seaton, E., & Ethnic and Racial Identity in the 21st Century Study Group. (2014). Ethnic and racial identity during adolescence and into young adulthood: An integrated conceptualization. *Child Development*, *85*(1), 21–39. https://doi.org/10.1111/cdev.12196

Waxman, S. R. (2021). Racial awareness and bias begin early: Developmental entry points, challenges, and a call to action. *Perspectives on Psychological Science*, *16*(5), 893–902. https://doi.org/10.1177/17456916211026968

Williams, C. D., Byrd, C. M., Quintana, S. M., Anicama, C., Kiang, L., Umaña-Taylor, A. J., Calzada, E. J., Pabón Gautier, M., Ejesi, K., Tuitt, N. R., Martinez-Fuentes, S., White, L., Marks, A., Rogers, L. O., & Whitesell, N. (2020). A lifespan model of ethnic-racial identity. *Research in Human Development*, 17(2–3), 99–129. https://doi.org/10.1080/15427609.2020.1831882

Xiao, N. G., Wu, R., Quinn, P. C., Liu, S., Tummeltshammer, K. S., Kirkham, N. Z., Ge, L., Pascalis, O., & Lee, K. (2018). Infants rely more on gaze cues from own-race than other-race adults for learning under uncertainty. *Child Development*, *89*(3), e229–e244. https://doi.org/10.1111/cdev.12798

APPENDIX A: SCOPING REVIEW SEARCH STRATEGY

Table 4

Scoping Review Search Strategy

PsycInfo Including PsycArticles (ProQuest)
Searched 3/6/23
Keywords anywhere except full text

# of Search	Keywords and Controlled Vocabulary	# of Results
1	Infan* OR toddler* OR baby OR babies	186,144
2	MAINSUBJECT.EXACT.EXPLODE("Early Childhood Development")	40,806
3	1 OR 2	197,109
4	Sociali* OR recogni* OR identity OR preference OR raciali?ation OR bias OR perception OR attitude OR categor*	1,771,792
5	MAINSUBJECT.EXACT("Socialization") OR MAINSUBJECT.EXACT("Racial Bias") OR MAINSUBJECT.EXACT("Preferences") OR MAINSUBJECT.EXACT("Self Concept") OR MAINSUBJECT.EXACT("Face Perception") OR MAINSUBJECT.EXACT("Racial and Ethnic Attitudes") OR MAINSUBJECT.EXACT("Social Categorization")	141,812
6	4 OR 5	1,811,591
7	Race OR ethni* OR racial	215,633
8	MAINSUBJECT.EXACT("Racial Identity") OR MAINSUBJECT.EXACT.EXPLODE("Ethnic Identity")	20,522
9	7 OR 8	215,633
10	3 AND 6 AND 9	2,582
11	3 AND 6 AND 9 1990-present	2,362

ERIC (ProQuest)
Searched 3/6/23
Keywords anywhere except full text

# of Search	Keywords and Controlled Vocabulary	# of Results
1	Infan* OR toddler* OR baby OR babies	28,405
2	MAINSUBJECT.EXACT.EXPLODE("infants") OR MAINSUBJECT.EXACT("Toddlers")	18,626
3	1 OR 2	28,596
4	Sociali* OR recogni* OR identity OR preference OR raciali?ation OR bias OR perception OR attitude OR categor*	539,824
5	MAINSUBJECT.EXACT("Visual Perception") OR MAINSUBJECT.EXACT("Preferences") OR MAINSUBJECT.EXACT("Racial Bias") OR MAINSUBJECT.EXACT("Racial Identification") OR MAINSUBJECT.EXACT("Socialization") OR MAINSUBJECT.EXACT("Race Attitudes")	34,457
6	4 OR 5	546,017
7	Race OR ethni* OR racial	99,984

Table 4 (cont'd)

# of Search	Keywords and Controlled Vocabulary	# of Results
8	MAINSUBJECT.EXACT("Race") OR MAINSUBJECT.EXACT.EXPLODE("Ethnic Groups")	47,443
9	7 OR 8	120,056
10	3 AND 6 AND 9	459
11	3 AND 6 AND 9 1990-present	331

Education Source (EBSCO)
Searched 3/6/23

# of Search	Keywords and Controlled Vocabulary	# of Results
1	Infan* OR toddler* OR baby OR babies	70,999
2	DE "Child psychology" OR DE "Infant psychology" OR DE "Child Development"	52,164
3	1 OR 2	115,832
4	Sociali* OR recogni* OR identity OR preference OR raciali?ation OR bias OR perception OR attitude OR categor*	643,604
5	DE "Visual perception" OR DE "Perception" OR DE "Affiliation (Psychology)" OR DE "Attitude (Psychology)" OR DE "Group identity" OR "Attitudes of Ethnic Groups"	46,092
6	4 OR 5	643,821
7	Race OR ethni* OR racial	155,553
8	3 AND 6 AND 7	1,136
9	3 AND 6 AND 7 1990-present	969

Web of Science Core Collection (Web of Science)
Searched 3//6/23

# of Search	Keywords and Controlled Vocabulary	# of Results
1	TI=(Infan* OR toddler* OR baby OR babies)	280,701
2	AB=(Infan* OR toddler* OR baby OR babies)	382,409
3	1 OR 2	544,947
4	TI=(Sociali* OR recogni* OR identity OR preference OR raciali?ation OR bias OR perception OR attitude OR categor*)	1,082,048
5	AB=(Sociali* OR recogni* OR identity OR preference OR raciali?ation OR bias OR perception OR attitude OR categor*)	4,191,834
6	4 OR 5	4,656,216
7	TI=(Race OR ethni* OR racial)	205,285
8	AB=(Race OR ethni* OR racial)	407,967
9	7 OR 8	532,193
10	3 AND 6 AND 9	1,819
11	3 AND 6 AND 9 1990-present	1,817

Sociological Abstracts (ProQuest)
Searched 3/6/2023
Keywords anywhere except full text

# of Search	Keywords and Controlled Vocabulary	# of Results
1	Infan* OR toddler* OR baby OR babies	18,038

Table 4 (cont'd)

# of Search	Keywords and Controlled Vocabulary	# of Results
2	MAINSUBJECT.EXACT.EXPLODE("Infants") OR MAINSUBJECT.EXACT("Preschool Children")	5,321
3	1 OR 2	19,780
4	Sociali* OR recogni* OR identity OR preference OR raciali?ation OR bias OR perception OR attitude OR categor*	551,902
5	MAINSUBJECT.EXACT("Socialization") OR MAINSUBJECT.EXACT("Attitudes") OR MAINSUBJECT.EXACT("Perceptions") OR MAINSUBJECT.EXACT("Self Concept") OR MAINSUBJECT.EXACT("Prejudice") OR MAINSUBJECT.EXACT("Internalization") OR MAINSUBJECT.EXACT("Recognition (Psychology)") OR MAINSUBJECT.EXACT("Bias")	81,667
6	4 OR 5	563,350
7	Race OR ethni* OR racial	252,077
8	MAINSUBJECT.EXACT("Ethnic Identity") OR MAINSUBJECT.EXACT("Ethnicity") OR MAINSUBJECT.EXACT("Race")	66,560
9	7 OR 8	252,077
10	3 AND 6 AND 9	923
11	3 AND 6 AND 9 1990-Present	840

Family and Society Studies Worldwide (EBSCO)
Searched 3/6/23

# of Search	Keywords and Controlled Vocabulary	# of Results
1	Infan* OR toddler* OR baby OR babies	112,978
2	Sociali* OR recogni* OR identity OR preference OR raciali?ation OR bias OR perception OR attitude OR categor*	253,858
3	Race OR ethni* OR racial	58,118
4	1 AND 2 AND 3	877
5	1 AND 2 AND 3 1990-Present	740

APPENDIX B: SCOPING REVIEW INCLUDED PAPERS

Table 5

Papers Included in the Scoping Review with Key Characteristics

Publication Year	Country	Age of Sample	Reference
1991	USA	6mos	Langlois, J. H., Ritter, J. M., Roggman, L. A., & Vaughn, L. S. (1991). Facial diversity and infant preferences for attractive faces. *Developmental Psychology*, *27*(1), 79–84.
1997	Nr	6–36mos	Katz, P. A., & Kofkin, J. A. (1997). Race, gender, and young children. In *Developmental psychopathology: Perspectives on adjustment, risk, and disorder* (619144828; 1997-08446-003; pp. 74, Chapter xxi, 618 Pages). Cambridge University Press, New York, NY.
2004	France	3mos	Sangrigoli, S., & de Schonen, S. (2004). Recognition of own-race and other-race faces by three-month-old infants. *Journal Of Child Psychology And Psychiatry*, *45*(7), 1219–1227.
2005	UK	Newborns	Kelly, D., Quinn, P., Slater, A., Lee, K., Gibson, A., Smith, M., Ge, L., & Pascalis, O. (2005). Three-month-olds, but not newborns, prefer own-race faces. *Developmental Science*, *8*(6), F31–F36.
2006	Israel	3mos	Bar-Haim, Y., Ziv, T., Lamy, D., & Hodes, R. (2006). Nature and nurture in own-race face processing. *Psychological Science*, *17*(2), 159–163.
2007	Nr	3.5mos	Hayden, A., Bhatt, R. S., Joseph, J. E., & Tanaka, J. W. (2007). The other-race effect in infancy: Evidence using a morphing technique. *Infancy*, *12*(1), 95–104.
2007	UK	3mos, 6mos, 9mos	Kelly, D. J., Quinn, P. C., Slater, A. M., Lee, K., Ge, L., & Pascalis, O. (2007). The other-race effect develops during infancy—Evidence of perceptual narrowing. *Psychological Science*, *18*(12), 1084–1089.
2007	China	3mos	Kelly, D. J., Liu, S., Ge, L., Quinn, P. C., Slater, A. M., Lee, K., Liu, Q., & Pascalis, O. (2007). Cross-race preferences for same-race faces extend beyond the African versus Caucasian contrast in 3-month-old infants. *Infancy*, *11*(1), 87–95.
2008	Germany	3mos, 12mos, 18mos	Schug, M. G. (2009). *The ontogeny of group bias and prosocial behavior* (622040496; 2009-99010-341; Issue AAI3321556).
2008	Nr	2mos, 5mos, 8mos, 11mos	Rennels, J. L., & Davis, R. E. (2008). Facial experience during the first year. *Infant Behavior & Development*, *31*(4), 665–678.
2008	Nr	3mos	Quinn, P. C., Uttley, L., Lee, K., Gibson, A., Smith, M., Slater, A. M., & Pascalis, O. (2008). Infant preference for female faces occurs for same-but not other-race faces. *Journal of Neuropsychology*, *2*(1, SI), 15–26.
2009	USA	12mos	Shutts, K., Kinzler, K. D., McKee, C. B., & Spelke, E. S. (2009). Social information guides infants' selection of foods. *Journal of Cognition and Development*, *10*(1–2), 1–17.
2009	Nr	8mos	Ferguson, K. T., Kulkofsky, S., Cashon, C. H., & Casasola, M. (2009). The development of specialized processing of own-race faces in infancy. *Infancy*, *14*(3), 263–284.

Table 5 (cont'd)

Publication Year	Country	Age of Sample	Reference
2009	USA	6mos–36mos	Njoroge, W., Benton, T., Lewis, M. L., & Njoroge, N. M. (2009). What are infants learning about race? A look at a sample of infants from multiple racial groups. *Infant Mental Health Journal*, *30*(5, SI), 549–567.
2009	China	3mos, 6mos. 9mos	Kelly, D. J., Liu, S., Lee, K., Quinn, P. C., Pascalis, O., Slater, A. M., & Ge, L. (2009). Development of the other-race effect during infancy: Evidence toward universality? *Journal of Experimental Child Psychology*, *104*(1), 105–114.
2009	nr	9mos	Hayden, A., Bhatt, R. S., Zieber, N., & Kangas, A. (2009). Race-based perceptual asymmetries underlying face processing in infancy. *Psychonomic Bulletin & Review*, *16*(2), 270–275.
2010	nr	6mos, 9mos	Anzures, G., Quinn, P. C., Pascalis, O., Slater, A. M., & Lee, K. (2010). Categorization, categorical perception, and asymmetry in infants' representation of face race.
2010	nr	6mos	*Developmental Science*, *13*(4), 553–564.
2011	Australia	6mos, 9mos	Scott, L. S., & Monesson, A. (2010). Experience-dependent neural specialization during infancy. *Neuropsychologia*, *48*(6), 1857–1861.
			Heron-Delaney, M., Anzures, G., Herbert, J. S., Quinn, P. C., Slater, A. M., Tanaka, J. W., Kang, L., & Pascalis, O. (2011). Perceptual Training Prevents the Emergence of the Other Race Effect during Infancy. *PLoS One*, *6*(5).
2011	nr	9mos	Balas, B., Westerlund, A., Hung, K., & Nelson, C. A., III. (2011). Shape, color and the other-race effect in the infant brain. *Developmental Science*, *14*(4), 892–900.
2011	nr	6–10mos	Wheeler, A., Anzures, G., Quinn, P. C., Pascalis, O., Omrin, D. S., & Lee, K. (2011). Caucasian Infants Scan Own- and Other-Race Faces Differently. *PLoS One*, *6*(4).
2011	nr	10mos, 2.5–3yrs	Kinzler, K. D., & Spelke, E. S. (2011). Do infants show social preferences for people differing in race? *Cognition*, *119*(1), 1–9.
2011	nr	6mos, 9mos	Anzures, G., Pascalis, O., Quinn, P. C., Slater, A. M., & Lee, K. (2011). Minimizing Skin Color Differences Does Not Eliminate the Own-Race Recognition Advantage in Infants. *Infancy*, *16*(6), 640–654.
2011	nr	4–9mos	Liu, S., Quinn, P. C., Wheeler, A., Xiao, N., Ge, L., & Lee, K. (2011). Similarity and difference in the processing of same- and other-race faces as revealed by eye tracking in 4- to 9-month-olds. *Journal Of Experimental Child Psychology*, *108*(1), 180–189.
2012	nr	11.5mos	Mahajan, N., & Wynn, K. (2012). Origins of "Us" versus "Them": Prelinguistic infants prefer similar others. *Cognition*, *124*(2), 227–233.
2012	nr	6mos, 9mos	Xiao, W. S., Xiao, N. G., Quinn, P. C., Anzures, G., & Lee, K. (2013). Development of face scanning for own- and other-race faces in infancy. *International Journal of Behavioral Development*, *37*(2), 100–105.

Table 5 (cont'd)

Publication Year	Country	Age of Sample	Reference
2012	nr	6mos	Uttley, L., de Boisferon, A. H., Dupierrix, E., Lee, K., Quinn, P. C., Slater, A. M., & Pascalis, O. (2013). Six-month-old infants match other-race faces with a non-native language. *International Journal of Behavioral Development*, *37*(2), 84–89.
2012	nr	3mos	Ziv, T. (2013). *An examination of the own-race preference in infancy* (1411061134; 2013-99180-253; Issue AAI3543123).
2012	nr	5mos, 9mos	Vogel, M., Monesson, A., & Scott, L. S. (2012). Building biases in infancy: The influence of race on face and voice emotion matching. *Developmental Science*, *15*(3), 359–372.
2012	USA	3mos	Gaither, S. E., Pauker, K., & Johnson, S. P. (2012). Biracial and monoracial infant own-race face perception: An eye tracking study. *Developmental Science*, *15*(6), 775–782.
2012	nr	8–10mos	Anzures, G., Wheeler, A., Quinn, P. C., Pascalis, O., Slater, A. M., Heron-Delaney, M., Tanaka, J. W., & Lee, K. (2012). Brief daily exposures to Asian females reverses perceptual narrowing for Asian faces in Caucasian infants. *Journal of Experimental Child Psychology*, *112*(4), 484–495.
2012	Germany	3mos, 6mos	Fassbender, I., Lohaus, A., Thomas, H., Teubert, M., Vierhaus, M., Spangler, S. M., Kolling, T., Goertz, C., Graf, F., Lamm, B., Gudi, H., Freitag, C., Keller, H., Knopf, M., & Schwarzer, G. (2012). Association Learning with Own- and Other-race Faces in three- and six-month old infants—A longitudinal study. *Infant and Child Development*, *21*(4), 325–337.
2012	nr	3.5mos	Hayden, A., Bhatt, R. S., Kangas, A., Zieber, N., & Joseph, J. E. (2012). Race-Based Perceptual Asymmetry in Face Processing Is Evident Early in Life. *Infancy*, *17*(5), 578–590.
2013	nr	3–4mos, 9–10mos	Rennels, J. L., & Cummings, A. J. (2013). Sex differences in facial scanning: Similarities and dissimilarities between infants and adults. *International Journal of Behavioral Development*, *37*(2), 111–117.
2013	USA	8mos, 12mos	Powell, L. J., & Spelke, E. S. (2013). Preverbal infants expect members of social groups to act alike. *Proceedings of the National Academy of Sciences of the United States of America*, *110*(41), E3965–E3972.
2013	Germany	14mos	Buttelmann, D., Zmyj, N., Daum, M., & Carpenter, M. (2013). Selective Imitation of In-Group Over Out-Group Members in 14-Month-Old Infants. *Child Development*, *84*(2), 422–428.
2013	USA	9mos	Kim, H. I. (2014). *The happy effect: The role of familiarity in the development of face processing during infancy* (1523811981; 2014-99081-102; Issue AAI3564440).
2013	Germany	3mos, 6mos, 9mos	Spangler, S. M., Schwarzer, G., Freitag, C., Vierhaus, M., Teubert, M., Fassbender, I., Lohaus, A., Kolling, T., Graf, F., Goertz, C., Knopf, M., Lamm, B., & Keller, H. (2013). The Other-Race Effect in a Longitudinal Sample of 3-, 6-and 9-Month-Old Infants: Evidence of a Training Effect. *Infancy*, *18*(4), 516–533.

Table 5 (cont'd)

Publication Year	Country	Age of Sample	Reference
2014	USA	19mos	Howard, L. H., Carrazza, C., & Woodward, A. L. (2014). Neighborhood linguistic diversity predicts infants' social learning. *Cognition*, *133*(2), 474–479.
2014	nr	6mos, 9mos	Xiao, W. S., Quinn, P. C., Pascalis, O., & Lee, K. (2014). Own- and other-race face scanning in infants: Implications for perceptual narrowing. *Developmental Psychobiology*, *56*(2), 262–273.
2014	Cameroon	3mos, 6mos	Fassbender, I., Lohaus, A., Thomas, H., Teubert, M., Vierhaus, M., Lamm, B., Freitag, C., Graf, F., Keller, H., Schwarzer, G., & Knopf, M. (2014). African Versus Caucasian Faces in a Visual Expectation Paradigm: A Longitudinal Study with German and Cameroonian Infants. *Journal of Cross-Cultural Psychology*, *45*(8), 1273–1287.
2014	nr	15mos	Burns, M. P., & Sommerville, J. A. (2014). "I pick you": The impact of fairness and race on infants' selection of social partners. *Frontiers in Psychology*, *5*.
2015	USA	19mos	Howard, L. H., Henderson, A. M. E., Carrazza, C., & Woodward, A. L. (2015). Infants' and Young Children's Imitation of Linguistic In-Group and Out-Group Informants. *Child Development*, *86*(1), 259–275.
2015	nr	3–4mos, 9–10mos, 12mos	Kayl, A. J. (2015). *Examining the dynamics of infant face processing using state space grids* (1870295717; 2016-47711-285; Issue AAI10014633) [University of Nevada, Las Vegas].
2015	USA	3mos, 10mos	Kim, H. I., Johnson, K. L., & Johnson, S. P. (2015). Gendered race: Are infants' face preferences guided by intersectionality of sex and race? *Frontiers In Psychology*, *6*.
2015	UK	3–4mos, 8–9mos	Tham, D. S. Y., Bremner, J. G., & Hay, D. (2015). In infancy the timing of emergence of the other-race effect is dependent on face gender. *Infant Behavior & Development*, *40*, 131–138.
2015	nr	3mos, 6mos, 9mos	Liu, S., Xiao, N. G., Quinn, P. C., Zhu, D., Ge, L., Pascalis, O., & Lee, K. (2015). Asian infants show preference for own-race but not other-race female faces: The role of infant caregiving arrangements. *Frontiers in Psychology*, *6*.
2015	China	3–9mos	Liu, S., Xiao, W. S., Xiao, N. G., Quinn, P. C., Zhang, Y., Chen, H., Ge, L., Pascalis, O., & Lee, K. (2015). Development of Visual Preference for Own- Versus Other-Race Faces in Infancy. *Developmental Psychology*, *51*(4), 500–511.
2016	UK	11mos	Begus, K., Gliga, T., & Southgate, V. (2016). Infants' preferences for native speakers are associated with an expectation of information. *Proceedings of the National Academy of Sciences of the United States of America*, *113*(44), 12397–12402.
2016	Taiwan	4mos, 6mos, 9mos	Chien, S. H.-L., Wang, J.-F., & Huang, T.-R. (2016). Developing the Own-Race Advantage in 4-, 6-, and 9-Month-Old Taiwanese Infants: A Perceptual Learning Perspective. *Frontiers in Psychology*, *7*.
2016	nr	6mos, 9mos	Quinn, P. C., Lee, K., Pascalis, O., & Tanaka, J. W. (2016). Narrowing in categorical responding to other-race face classes by infants. *Developmental Science*, *19*(3), 362–371.

Table 5 (cont'd)

Publication Year	Country	Age of Sample	Reference
2016	nr	9mos	Markant, J., Oakes, L. M., & Amso, D. (2016). Visual selective attention biases contribute to the other-race effect among 9-month-old infants. *Developmental Psychobiology*, *58*(3), 355–365.
2016	Germany	3mos, 6mos, 9mos	Fassbender, I., Teubert, M., & Lohaus, A. (2016). The development of preferences for own-race versus other-race faces in 3-, 6- and 9-month-old Caucasian infants. *European Journal of Developmental Psychology*, *13*(1), 152–165.
2017	nr	9mos	Liberman, Z., Woodward, A. L., & Kinzler, K. D. (2017). Preverbal Infants Infer Third-Party Social Relationships Based on Language. *Cognitive Science*, *41*, 622–634.
2017	nr	5mos, 10mos	Pickron, C. B., Fava, E., & Scott, L. S. (2017). Follow My Gaze: Face Race and Sex Influence Gaze-Cued Attention in Infancy. *Infancy*, *22*(5), 626–644.
2017	USA	6mos, 8mos	Ellis, A. E., Xiao, N. G., Lee, K., & Oakes, L. M. (2017). Scanning of own- versus other-race faces in infants from racially diverse or homogenous communities. *Developmental Psychobiology*, *59*(5), 613–627.
2017	nr	3mos, 6mos, 9mos	Thomas, H., & Fassbender, I. (2017). Modeling Infant i's Look on Trial t: Race-Face Preference Depends on i's Looking Style. *Frontiers In Psychology*, *8*.
2017	nr	4mos, 6mos, 8mos,10mos, 12mos	Montoya, L., Westerlund, A., Troller-Renfree, S., Righi, G., & Nelson, C. A. (2017). The effect of heterogeneous race exposure during infancy. *Cognitive Development*, *42*(SI), 74–83.
2017	nr	11mos	Singarajah, A., Chanley, J., Gutierrez, Y., Cordon, Y., Nguyen, B., Burakowski, L., & Johnson, S. P. (2017). Infant attention to same-and other-race faces. *Cognition*, *159*, 76–84.
2017	China	3mos–9mos	Xiao, N. G., Quinn, P. C., Liu, S., Ge, L., Pascalis, O., & Lee, K. (2018). Older but not younger infants associate own-race faces with happy music and other-race faces with sad music. *Developmental Science*, *21*(2).
2017	nr	6mos, 9mos	Safar, K., Kusec, A., & Moulson, M. C. (2017). Face Experience and the Attentional Bias for Fearful Expressions in 6-and 9-Month-Old Infants. *Frontiers In Psychology*, *8*.
2017	nr	10mos–11.5mos	Singh, L., Loh, D., & Xiao, N. G. (2017). Bilingual Infants Demonstrate Perceptual Flexibility in Phoneme Discrimination but Perceptual Constraint in Face Discrimination. *Frontiers in Psychology*, *8*.
2017	nr	3.5mos, 6mos	Heron-Delaney, M., Damon, F., Quinn, P. C., Meary, D., Xiao, N. G., Lee, K., & Pascalis, O. (2017). An adult face bias in infants that is modulated by face race. *International Journal of Behavioral Development*, *41*(5), 581–587.
2018	China	7mos	Xiao, N. G., Wu, R., Quinn, P. C., Liu, S., Tummeltshammer, K. S., Kirkham, N. Z., Ge, L., Pascalis, O., & Lee, K. (2018). Infants Rely More on Gaze Cues From Own-Race Than Other-Race Adults for Learning Under Uncertainty. *Child Development*, *89*(3), e229–e244.

Table 5 (cont'd)

Publication Year	Country	Age of Sample	Reference
2018	nr	4–6mos, 10–12mos	Minar, N. J., & Lewkowicz, D. J. (2018). Overcoming the other-race effect in infancy with multisensory redundancy: 10–12-month-olds discriminate dynamic other-race faces producing speech. *Developmental Science*, *21*(4), 1–12.
2018	Malaysia	3–4mos, 8–9mos	Tham, D. S. Y., Woo, P. J., & Bremner, J. G. (2018). Development of the other-race effect in Malaysian-Chinese infants. *Developmental Psychobiology*, *61*(1), 107–115.
2018	nr	3mos, 6mos, 9mos, 12mos	Xiao, N. G., Mukaida, M., Quinn, P. C., Pascalis, O., Lee, K., & Itakura, S. (2018). Narrowing in face and speech perception in infancy: Developmental change in the relations between domains. *Journal of Experimental Child Psychology*, *176*, 113–127.
2018	Germany	9mos	Krasotkina, A., Goetz, A., Hoehle, B., & Schwarzer, G. (2018). Perceptual Narrowing in Speech and Face Recognition: Evidence for Intra-individual Cross-Domain Relations. *Frontiers in Psychology*, *9*.
2018	Israel	14mos	Ferera, M., Baron, A. S., & Diesendruck, G. (2018). Collaborative and competitive motivations uniquely impact infants' racial categorization. *Evolution and Human Behavior*, *39*(5), 511–519.
2018	nr	16mos	Weatherhead, D., & White, K. S. (2018). And then I saw her race: Race-based expectations affect infants' word processing. *Cognition*, *177*, 87–97.
2018	nr	6mos	Holvoet, C., Arciszewski, T., Scola, C., & Picard, D. (2018). Infants' Visual Preferences for Prosocial Behavior and Other-Race Characters at 6 Months: An Eye-Tracking Study. *Sage Open*, *8*(2).
2018	China	6mos, 9mos	Liu, S., Quinn, P. C., Xiao, N. G., Wu, Z., Liu, G., & Lee, K. (2018). Relations between scanning and recognition of own- and other-race faces in 6- and 9-month-old infants. *Psych Journal*, *7*(2), 92–102.
2019	nr	11mos	de Klerk, C. C. J. M., Bulgarelli, C., Hamilton, A., & Southgate, V. (2019). Selective facial mimicry of native over foreign speakers in preverbal infants. *Journal of Experimental Child Psychology*, *183*, 33–47.
2019	Canada	6mos, 11mos	May, L., Baron, A. S., & Werker, J. F. (2019). Who can speak that language? Eleven-month-old infants have language-dependent expectations regarding speaker ethnicity. *Developmental Psychobiology*, *61*(6), 859–873.
2019	Germany	3mos, 6mos, 9mos	Fassbender, I., & Lohaus, A. (2019). Fixations and Fixation Shifts in Own-Race and Other-Race Face Pairs at Three, Six and Nine Months. *Infant Behavior & Development*, *57*.
2019	Singapore	18mos–20mos	Singh, L., Quinn, P. C., Xiao, N. G., & Lee, K. (2019). Monolingual but not bilingual infants demonstrate racial bias in social cue use. *Developmental Science*, *22*(6).
2019	Italy	5mos, 9mos	Timeo, S., Brigadoi, S., & Farroni, T. (2019). Perception of Caucasian and African faces in 5-to 9-month-old Caucasian infants: A functional near-infrared spectroscopy study. *Neuropsychologia*, *126*, 3–9.

Table 5 (cont'd)

Publication Year	Country	Age of Sample	Reference
2019	USA	9mos	Kelsey, C. M., Krol, K. M., Kret, M. E., & Grossmann, T. (2019). Infants' brain responses to pupillary changes in others are affected by race. *Scientific Reports*, *9*.
2020	UK	6mos, 9mos, 12mos	Prunty, J. E., Jackson, K. C., Keemink, J. R., & Kelly, D. J. (2020). Caucasian infants' attentional orienting to own- and other-race faces. *Brain Sciences*, *10*(1).
2020	Spain	14mos	Colomer, M., & Sebastian-Galles, N. (2020). Language background shapes third-party communication expectations in 14-month-old infants. *Cognition*, *202*.
2020	nr	6mos, 12mons, 18mos	Aktar, E., Raijmakers, M. E. J., & Kret, M. E. (2020). Pupil mimicry in infants and parents. *Cognition and Emotion*.
2020	USA	7mos-12mos	Hwang, H. G., Debnath, R., Meyer, M., Salo, V. C., Fox, N. A., & Woodward, A. (2020). Neighborhood racial demographics predict infants' neural responses to people of different races. *Developmental Science*.
2020	Singapore	24mos	Singh, L., Tan, A. R. Y., Lee, K., & Quinn, P. C. (2020). Sensitivity to race in language comprehension in monolingual and bilingual infants. *Journal of Experimental Child Psychology*, *199*.
2020	nr	6mos, 11mos	Keenan, B., & Markant, J. (2020). Differential sensitivity to species- and race-based information in the development of attention orienting and attention holding face biases in infancy. *Developmental Psychobiology*, *63*(3), 461–469.
2020	Japan	8mos-9mos	Ujiie, Y., Kanazawa, S., & Yamaguchi, M. K. (2020). The Other-Race-Effect on Audiovisual Speech Integration in Infants: A NIRS Study. *Frontiers In Psychology*, *11*.
2020	Italy	1–2yrs, 3–4yrs	Castelli, L., & Carraro, L. (2020). No evidence of racial discrimination among toddlers. *Psicologia Sociale*, *15*(2), 285–292.
2020	nr	3mos, 6mos	Quinn, P. C., Lee, K., Pascalis, O., & Xiao, N. G. (2020). Emotional Expressions Reinstate Recognition of Other-Race Faces in Infants Following Perceptual Narrowing. *Developmental Psychology*, *56*(1), 15–27.
2021	Australia	10mos–12mos	Liu, L., du Toit, M., & Weidemann, G. (2021). Infants are sensitive to cultural differences in emotions at 11 months. *PLoS One*, *16*(9).
2021	Canada	24mos–26mos	Weatherhead, D., & White, K. S. (2021). Toddlers link social and speech variation during word learning. *Developmental Psychology*, *57*(8), 1195–1209.
2021	Canada	4mos	Orena, A. J., & Werker, J. F. (2021). Infants' mapping of new faces to new voices. *Child Development*, *92*(5), e1048–e1060.
2021	Canada	18mos	Weatherhead, D., Kandhadai, P., Hall, D. G., & Werker, J. F. (2021). Putting mutual exclusivity in context: Speaker race influences monolingual and bilingual infants' word-learning assumptions. *Child Development*, *92*(5), 1735–1751.
2021	USA	20mos-30mos	Qin, B. (2021). *Children's processing of spoken language in our social world* (2636172989; 2022-13251-112) [State University of New York at Buffalo].

Table 5 (cont'd)

Publication Year	Country	Age of Sample	Reference
2021	Germany	6mos, 9mos	Krasotkina, A., Götz, A., Höhle, B., & Schwarzer, G. (2021). Perceptual narrowing in face- and speech-perception domains in infancy: A longitudinal approach. *Infant Behavior & Development*, *64*, 9.
2021	nr	18mos, 24mos	Laible, D., Karahuta, E., Stout, W., Van Norden, C., Cruz, A., Neely, P., Carlo, G., & Agalar, A. E. (2021). Toddlers' helping, sharing, and empathic distress: Does the race of the target matter? *Developmental Psychology*, *57*(9), 1452–1462.
2021	Japan	5–6mos, 8–9mos	Ujiie, Y., Kanazawa, S., & Yamaguchi, M. K. (2021). The other-race effect on the McGurk effect in infancy. *Attention, Perception, & Psychophysics*, *83*(7), 2924–2936.
2021	California	20mos	Pronovost, M. A., & Scott, R. M. (2021). 20-month-olds Use Social Categories to Make Inductive Inferences about Agents' Preferences. *Journal of Cognition and Development*, *22*(2), 328–342.
2021	France	9mos, 12mos	de Boisferon, A. H., Kubicek, C., Gervain, J., Schwarzer, G., Loevenbruck, H., Vilain, A., Fort, M., Meary, D., & Pascalis, O. (2021). Language familiarity influences own-race face recognition in 9-and 12-month-old infants. *Infancy*.
2021	Israel	11mos	Ferera, M., Pun, A., Baron, A. S., & Diesendruck, G. (2021). The effect of familiarity on infants' social categorization capacity. *PLoS One*, *16*(3).
2021	USA	14mos	Haynes, K. T., Kelsey, C. M., & Grossmann, T. (2021). Probing infants' sensitivity to pupil size when viewing eyes. *Infancy*, *26*(2), 291–302.
2021	Germany	12mos	Krasotkina, A., Goetz, A., Hoehle, B., & Schwarzer, G. (2021). Bimodal familiarization re-sensitizes 12-month-old infants to other-race faces. *Infant Behavior & Development*, *62*.
2021	California	7.5mos–10.5mos	Oakes, L. M., DeBolt, M. C., Beckner, A. G., Voss, A. T., & Cantrell, L. M. (2021). Infant Eye Gaze While Viewing Dynamic Faces. *Brain Sciences*, *11*(2).
2021	USA	6–7mos	Quinn, P. C., Balas, B. J., & Pascalis, O. (2021). Reorganization in the representation of face-race categories from 6 to 9 months of age: Behavioral and computational evidence. *Vision Research*, *179*, 34–41.
2022	nr	10mos	Roth, K., & Reynolds, G. (2022). Neural correlates of subordinate-level categorization of own- and other-race faces in infancy. *Acta Psychologica*, *230*.
2022	France	9mos, 12mos	Damon, F., Quinn, P. C., Méary, D., & Pascalis, O. (2022). Asymmetrical responding to male versus female other-race categories in 9- to 12-month-old infants. *British Journal of Psychology*.
2022	Singapore	3mos, 6mos, 6mos-7mos, 9mos	Singh, L., Phneah, K. T., Wijayaratne, D. C., Lee, K., & Quinn, P. C. (2022). Effects of interracial experience on the race preferences of infants. *Journal of Experimental Child Psychology*, *216*, 18.

CHAPTER 3: STUDY 2 –

JUSTICE-BASED ETHNIC-RACIAL SOCIALIZATION AMONG CAREGIVERS OF TODDLERS: INITIAL MEASUREMENT DEVELOPMENT TO EXAMINE BELIEFS AND PRACTICES

Introduction

Ethnic-racial identity (ERI) can be understood as the way in which individuals conceptualize and connect with their personal, ethnic heritage and racial background (Umaña-Taylor et al., 2014; Williams et al., 2020). ERI is cultivated among young children through ethnic-racial socialization (ERS). ERS refers to the messages that children receive regarding ethnicity and race (Hughes et al., 2006; Quintana, 1998). Although all young children experience ERS from primary caregivers, the process is not neutral (Bussey & Jemal, 2022). The ERS approach employed by caregivers can cultivate healthy ERI development, or harmful ERI development. Healthy ERI refers to having awareness of and positive regard for one's ERI and the ability to recognize and process the nuances of what ERI means in a racialized society. Unhealthy ERI refers to the opposite: a lack of awareness and positive regard for one's ERI and an inability to recognize or process what ERI means in a racialized society.

Healthy ERI is developed through an active and ongoing commitment to building ethnic-racial awareness, engaging in self-reflection, and acknowledging systemic positionality in terms of how one's various social identities (e.g., race, gender, ability, citizenship, education, etc.) are positioned proximally or distally to social privilege (Bonilla-Silva, 2019; Rogers et al., 2020; Williams et al., 2020). As expressed in Freire's Pedagogy of the Oppressed, this work demands critical evaluation and continuous effort (1978).

Evidence of healthy ERI in the U.S. context includes the demonstration of (1) understanding the constructed meaning of ethnicity and race, (2) acknowledging how disparate outcomes among ethnic-racial groups are connected to systemic functions and (3) active participation in resisting and dismantling such systemic functions that perpetuate ethnic-racial injustice (Iruka et al., 2020; Kendi, 2019, Meltzoff & Gilliam, 2024). Harmful ERI can be understood as the lack or absence of the aforementioned understanding, acknowledgement, and participation. The consequences of not developing a healthy ERI among individuals with minoritized identities include lower academic achievement, more health-related problems, and increased expression of negative internalized and externalized behaviors (Rivas-Drake et al., 2014).

Among white identifying populations, a lack of healthy ERI can result in an increase of unconscious bias, and a lack of positionality awareness, both of which can contribute to the development of racist beliefs and engagement in discriminatory actions (Hazelbacker et al., 2021; Pahlke et al., 2012; Perszyk et al., 2019). Further, unhealthy ERI among white individuals with Euro-American backgrounds is demonstrated by erasure of individual, ethnic heritage and a diminished sense of the ways in which human thriving is interconnected among people of all ethnicities and races (Efird et al., 2024; Malat et al., 2018; Wilkerson, 2020). Among all populations, not developing a healthy ERI is associated with the perpetuation of internalized and externalized racism that contributes to the maintenance of white supremacy and inequitable systemic outcomes (Gilliam, 2005; Iruka et al., 2020; Jemal & Bussey, 2022; Kendi, 2019).

The development of a healthy ERI is neither linear nor contained within any one period of development or level of ecological systems. Rather, it starts in infancy, unfolds in association with the influence of multiple bioecological systems, and continues throughout one's lifetime

(Garcia-Coll et al.,1996; Spencer et al, 1997; Williams et al., 2020). The lifespan model of ethnic-racial identity illustrates the simultaneous and dynamic nature of this process (Williams et al., 2020). Throughout the first months and years of life, initial awareness of ERI emerges and early perceptions begin to take shape (Williams et al., 2020). This perception development is influenced by a myriad of ERS processes. Previous studies have made a distinction between a color evasive approach to ERS (formerly known as the colorblind approach) which focuses on human similarities while ignoring differences and avoiding acknowledgement of racial injustice, and a color conscious approach that intentionally names race and discusses the impacts of individual and institutional racism (Hughes et al., 2023; Abaied et al., 2022, Hagerman 2014, Zucker & Patterson, 2018).

While the color conscious approach is associated with more positive outcomes (Hazelbaker et al. 2022, Woolverton & Marks 2022), it is not enough. I propose that the cultivation of healthy ERI requires the color conscious approach to go a step further by integrating an explicit social justice framework. Although ERS often functions as a dyadic process between caregivers and children, when a justice approach is taken, it can also seed systems change. As Ferman states, "...through critical analysis, the social justice framework provides a pathway to collective action that challenges systems of oppression" (2020, p. 438). Thus, justice-based ethnic-racial socialization (JBERS) is a specific approach to ERS that is derived from the integration of a color conscious ideology within a social justice framework. This approach can be part of systems change efforts, and its utilization can start with the very youngest children.

Purpose of the Present Study

The purpose of this study is to describe two new measures developed to assess caregiver capacity to engage in JBERS with infants and toddlers based on caregiver beliefs and practices. The two new measures introduced are not intended to directly measure JBERS as a construct, rather they are designed to measure the factors that indicate caregiver capacity to engage in the JBERS approach. I posit that JBERS is comprised of the ERI awareness that caregivers demonstrate, the accountability caregivers attach to learning about ERI, and the ERS practices that caregivers engage in directly with young children. Taken together, the two measures can indicate if a caregiver is high or low in capacity to engage in JBERS as an approach to ERS.

I posit that caregiver capacity to engage in JBERS requires accountability in relation to individual and systemic ERI awareness (beliefs) and action (ERS practices). I outline the development process of two measures and examine the factorial structure of the JBERS construct by considering the subcomponents assessed in each measure together. Possible measure adaptations and future directions are also discussed.

Ethnic-Racial Socialization in Early Childhood

ERI as a Developmental Process

Although ethnic-racial bias is not typically observable until the preschool years (Castelli & Carraro, 2020; Kinzler & Spelke, 2011), the awareness, perceptions, and attitudes that proceed the development of bias based on ethnicity and race begin to form in infancy and toddlerhood (Hayden 2012; Kelly et al. 2005; Liu et al. 2015). Williams and colleagues (2020) describe the precursor to ERI as ethnic-racial priming. Ethnic-racial priming occurs when infants first notice the characteristics of others that are related to ethnicity and race such as skin color, phenotypic features, and the sounds of spoken language (e.g., accent, pitch, and cadence), and begin to

connect ethnicity and race to the categories of characteristics that are familiar and characteristics that are novel (Williams et al., 2020). Socialization practices and the nature of exposure to people of diverse ethnic-racial backgrounds influence how infants make meaning of ethnicity and race and set the foundation for ERI development (Williams et al., 2020).

The period of ethnic-racial priming begins in the earliest months of life and the impact of exposure is measurable among infants by 3 months of age when they can distinguish between same and other-race faces (Kelly et al. 2005, Fassbender et al. 2016, Liu et al. 2015). Before their first birthday, infants express preference for people who have features they are familiar with while demonstrating a decreased ability to differentiate facial images of other-race individuals (Heron-Delaney et al. 2017; Krasotkina et al. 2018; Zubler et al. 2022).

In the toddler years, children begin to understand themselves as distinct from others while using visible characteristics to categorize people they encounter. Language development also flourishes in toddlerhood including the use of color names and the understanding of words that describe basic emotions (Berk, 2021; Derman-Sparks and Edwards 2020). As young children grow in their sense of self and deepen their understanding of how others are both like and not like them (Repacholi & Gopnik 1997; Rochat, 2003; Rochat & Striano 2000), caregivers can intentionally support the development of healthy ERI through JBERS (Curenton et al., 2020; Gillen-O'Neel al., 2022; Hazelbaker et al., 2022; Rogers et al., 2020; Waxmen, 2021). Elevating proactive work in the domain of early childhood provides opportunities to intervene in the developmental period when ethnic-racial awareness initially develops, and biases first emerge (Bigler & Liben, 2007).

Caregivers as Agents of ERS

While there are innumerable socializing influences that impact racial priming, primary caregivers tend to have the most prominent role in ERS throughout the early childhood years (Hughes et al., 2023). Parents and other primary caregivers (including close family and community members) tend to be the initial socializing agents in the lives of young children with the most consistent influence (Hughes et al., 2023). For the most part, primary caregivers determine where young children go, who they are exposed to, and what messages they receive about ethnicity and race (Hughes et al., 2023). In the United States, there is often a distinctive difference between the messages provided by caregivers from minoritized backgrounds and white caregivers (Hughes et al., 2023). Caregivers of color tend to transmit cultural pride to their children along with messages intended to keep them safe through preparation for bias and promotion of mistrust (Hughes et al., 2006). White caregivers typically deliver more egalitarian focused messages that de-emphasize the significance of ethnicity and race. The color evasive approach often employed by white caregivers is rooted in a denial of systemic racism and an abduction of responsibility to participate in addressing racial injustice (Hughes et al, 2023, Scott et al., 2024).

ERS in early childhood directly influences how children come to develop their own ethnic-racial identity and consider that of others (Byrd, 2012; Umaña-Taylor et al., 2014; Williams et al., 2020). In a doll play study conducted by Njoroge and colleagues (2009), both white and Asian infants and toddlers demonstrated clear preference for dolls with specific phenotypic features. Researchers have also found that Black and white children between the ages of 3 and 6 display white-biased choice behavior (Murray & Mandata 2002), and studies show that as early as preschool, children predict that white people will have more prestigious jobs,

wealth and resources compared to Black people (Elenbaas & Killen 2016, Mandalaywala et al., 2020). These findings were consistent not only among white children, but also among Black, Latiné, and multiracial children (Elenbaas & Killen 2016, Mandalaywala et al., 2020). Such findings are not inevitable (Garcia Coll et al., 1996). Ethnic-racial bias is learned (Hughes & Chen, 1999; Katz, 2003). Thus, ERS is a critical process that has the potential to facilitate or disrupt the development of ethnic-racial bias (Castelli et al., 2021; Waxman, 2021).

Research demonstrates that color conscious ERS is associated with positive outcomes for children from all ethnic-racial backgrounds (e.g., Mesman et al., 2022; Hughes et al, 2007). For example, a study of 7-and-8-year-old children who identified as Black, Latiné, or multiracial found that ERI, most notable ERI commitment ("... a subjective sense of belonging to one's ethnic–racial group or groups" Marcelo & Yates, 2018, p. 9) moderated the relation between experiencing ethnic-racial discrimination and both internalized and externalized behavior problems as measured by the Test Observation Form (TOF; McConaughy & Achenbach, 2004). Another study with 4- to 6-year-old Latiné children found that positive feelings toward one's ethnic-racial group were associated with fewer behavior problems (Serrano-Villar & Calzada, 2016). A color conscious approach to ERS is beneficial to both children of color and white children as it has been associated with more positive self-concept among African American children (Swanson et al, 2009), and less anti-Black bias among white children (Hughes et al., 2007).

To promote young children learning to value their own ethnic-racial identity (ERI) and that of others, it is critical for caregivers to understand how healthy views of ethnicity and race are fostered within the context of child development, why it is important to engage in ERS early, and what specific ERS practices are impactful (Hughes et al., 2006; Umaña-Taylor et al., 2014;

Williams et al., 2020). ERS that disrupts the development of bias is meaningful given that racism is rooted in bias, and systems are created by individuals–all of whom hold some form of bias as a natural outcome of how the brain processes social experiences to group people into categories, then makes meaning of experiences by associating those categories of people with patterns and social constructs in ways that vary in accuracy and affect (Harris & Cossins, 2020). ERS in the earliest years of a child's life can be one component in the multifaceted strategy to disrupt the development of harmful ethnic-racial bias, especially when guided by a social justice framework (Branch & Newcombe, 1986; Katz, 2003; White-Johnson et al., 2010).

Justice-Based Ethnic-Racial Socialization

Kucskar Mitsch and colleagues (2023) define social justice as a "theoretical framework that focuses on actions and beliefs that attempt to address oppression and inequity while promoting access, participation, and freedom for all individuals" (p.494). Applying a justice orientation requires the inclusion of a critical perspective that calls both individuals and systems to account. JBERS messages focus on acknowledging the historic events that enabled the colonization and oppression of targeted communities of color along with the current mechanisms that promote and sustain white supremacy in the United States. JBERS messages encourage individuals to discover and reflect on their own intersectional identities with the goals of understanding their personal history, honoring their shared humanity and individual dignity, and identifying their unique positionality and responsibility in relation to advancing anti-racism and social justice. This approach facilitates the development of a healthy ERI.

JBERS is an approach to ERS that integrates a social justice framework with a color conscious approach. JBERS centers justice by elevating individual positionality and responsibility in dismantling white supremacy. This is not to absolve institutions and systemic

power structures of culpability, but the intent is to acknowledge that individuals contribute to the creation and maintenance of oppressive systems (Jamal & Bussey, 2022). Thus, individuals are capable of contributing to systems level change.

Present Study

While infancy and toddlerhood are sensitive periods for developing a sense of self and other, much of the research on ERS to date has been focused on adolescents when the ERS processes are more prevalent and explicit as adolescents consciously engage with identity development processes (Hughes et al., 2006; Murry et al., 2007; Rivas-Drake et al., 2014). Some studies include children in kindergarten and preschool (Blanchard et al., 2019; Derman-Sparks & Edwards, 2020; Dunbar et al., 2017); however, the current literature on caregiver-delivered ERS among infants and toddlers from diverse ethnic-racial backgrounds is limited. Although previous research has begun to include infants and toddlers from diverse ethnic-racial backgrounds (e.g., Blanchard, et al., 2019; Contreras et al., 2021; Njorge et al., 2009), there remains a need for further exploration of ERS delivered by caregivers to infants and toddlers and more consideration how a social justice framework might be integrated in that deliver.

This study aims to support ERS research among caregivers of infants and toddlers by developing two new measures that will assess (1) ERS beliefs and (2) ERS practices within this population. This study also aims to further define JBERS through the application of exploratory factor analysis with both new measures. We hypothesize that the underlying factors of caregiver capacity to engage in JBERS will be personal and systemic ERI awareness (awareness), a sense of accountability to learn about ERI (accountability), and a commitment to engage in social justice advancing actions in both the home and community environments (action). We hypothesize that these will be separate factors which are positively associated with each other.

Method

Measure Development

To develop the Ethnic-Racial Identity Awareness and Beliefs Development (ERIAL) scale and the Early Ethnic-Racial Socialization Practices (EERSP) scale, six existing ERS measures were examined. Items that were determined to be developmentally relevant for children birth to 3 years were included and adapted to reflect clear and current language (Appendix A). Novel items were also developed to fill in gaps. For example, the original item on the Multicultural Youth Socialization scale, "[My parent] Told me to be proud of the way I look (e.g., skin color, hair color/type)" was adapted to be, "I talk to my child about the way they look (e.g., skin color, hair color/texture) in positive ways", and the following novel item was added to include a focus on positively describing the way that people from ethnic-racial background that differ from the target child look, "I talk to my child about the way people from other ethnic-racial backgrounds look (e.g., skin color, hair color/texture) in positive ways".

Novel items were also added to examine how caregivers thought about their ethnic identify ("My ethnicity is an important aspect of my personal identity"), their racial identity ("My race is an important aspect of my personal identity"), intersectionality ("When I think about all of my personal identities together (race, class, education, income, ability, gender, sexuality, religion, citizenship), I believe that some of them give me advantages and some of them hinder me in American society."), systemic racism ("In the U.S., ethnicity-race impacts a person's access to social systems such as education, employment, housing, health care, and public safety."), beliefs about ERS ("I believe that it is important for my child to learn about the ethnic background[s] of our family"), and beliefs about justice, ("I actively think about ways that I can help my child learn about racial justice.").

Novel items were developed to access caregivers' sense of accountability to engage in JBERS ("As a caregiver, I have a responsibility to teach my child about ethnicity and race.", "Helping my child understand the impact of ethnic-racial identity in the United States is a significant priority for me"), and the practices they intentionally engaged in related to their community environment ("I intentionally choose to live in a neighborhood that has significant ethnic-racial diversity.", "I intentionally choose to live in a neighborhood where my child can regularly see and interact with other people who look like them").

Five ERS content experts representing variation in the ages and the ethnic-racial backgrounds of the populations they study, provided feedback on the draft measure. Content expert feedback was applied to finalize items. Based on expert feedback, the items were split into two measures, one focused on beliefs (the ERIAL scale) and one focused on practices (the EERSP scale). While both beliefs and practices are hypothesized to be factors that define JBERS, they were best organized in two distinct measures within the same survey. Upon finalization of the draft measures, a pilot survey was conducted with 4 primary caregivers of infants and toddlers. Two were caregivers to white toddlers, one was a caregiver to a Black toddler, and one was a caregiver to multiracial, Black, Native, and Latiné toddlers. Three caregivers then participated in a focus group to provide feedback on item interpretation (the 4th provided feedback electronically). Caregiver feedback was used to create the final versions of the two new measures.

To test the reliability and validity of the new measures, existing, validated measures were included in the final survey in addition to the ERIAL scale and the EERSP scale. To test for convergent validity, the Ethnic Identity Scale (Umaña-Taylor et al., 2004) was included along with three measures developed by Rohrbach (2014) and used by Williams & Banerjee (2021): a

colorblind ideology measure, a fear of discussing race measure, and a prejudice concerns measure. To test for divergent validity, the Digital Screen Exposure Questionnaire (2021) was included.

Participants

The sample consisted of 154 caregivers of toddlers. To be eligible for participation in the study, individuals had to be (1) 18 years of age or older, (2) be the parent or legal guardian of a child who they identified as being Black/African American, white/Euro-American, or Multiracial/Black and one or more other races, (3) the target child had to be between 12 and 36 months of age at the time of enrollment, (4) caregivers had to have been born in the United States., (5) currently live in the United States, and (6) be able to speak, understand, and read English. Caregivers ranged in age from 20 to 50 years old with the mean caregiver age being 33.5 years. The age range of the toddlers was 12 to 36 months with the mean age being 26 months. Having a bachelor's degree was the most common education level reported for caregivers (30%), and the most frequently reported income range was $50,000 to $100.00 (23.5%).

Participants were primarily from two regions within one midwestern state in the United States. The sample also included participants from other states across the United States. Most frequent number of children caregivers reported having was 2 (42.3%) and 98.7% identified as the biological parent of the target child (*n* = 148) with 2 caregivers identifying as foster parents and one identifying as an adoptive parent. Seventy-nine percent of participants reported their ethnic-racial identity (ERI; *n* = 122). Of those who reported ERI, 47% identified as African American (*n* = 58), 50% identified as white (*n* = 61), 2% as Latiné (*n* = 2), and 1% as Middle Eastern (*n* = 1). 34% of the target children were identified as African American/Black (*n* = 52),

34% were identified as Euro-American/white, and 32% were identified as Multiracial/Black and one or more other races (n = 50).

Recruitment

Participants were originally recruited through a flyer posted on social media with a link and QR code providing anonymous access to an electronic survey. Significant bot activity and over 100 fraudulent responses were detected on the first day of recruitment. In response, data collection was temporarily paused. To ensure credible data collection, the open link was closed, and an updated flyer was created that included an email address through which potential participants could request an individualized survey link (see Appendix B). The electronic survey was password protected, and validation items were added to the survey. The updated flyer was distributed to childcare centers, and early childhood serving organizations. Additionally, snowball sampling was utilized to recruit participants. The institutional review board overseeing this study approved a protocol to access response validity and exclude all responses deemed fraudulent.

A purposive sampling strategy was utilized with potential participants being asked to complete a screening survey to ensure that they meet all inclusion criteria and that the sample would be approximately equal between the three included ethnic-racial groups of the target children. The goal of this purposive sampling strategy was to reflect multiple perspectives in relation to ERS beliefs and practices among caregivers of toddlers and preserve the ability to compare group differences (Creswell & Poth, 2018).

Procedure

This study was approved by the institutional review board of Michigan State University and the institutional review board of Grand Rapids Community College. Data were collected

through an electronic survey that was created on the Qualtrics platform. The three-month data collection occurred from July 8, 2024, through October 9, 2024. The survey included screening questions, demographic questions, and seven measures for a total of 146 items. Participants always saw screening questions first, followed by the seven measures in alternating order. Demographic questions were always seen last by participants (see Appendix C). Once started, there was no time limit for survey completion which allowed participants to start responding to survey questions, pause and come back at their convenience. The time participants took from starting the survey to completing it ranged from 10 minutes to 13.5 hours with an average completion time of 43 minutes. Participants received a $25 electronic Visa gift card upon completion of the survey.

Measures

Ethnic-Racial Identity Awareness and Learning (ERIAL) Scale. The ERIAL scale (see Appendix D) was created to assess ERS beliefs among caregivers of infants and toddlers. The ERIAL initially included 21 items explained by three subscales: personal awareness (5 items), systemic awareness (10 items), and accountability (6 items). Participants were given a 4-point Likert scale for response options from strongly disagree (1) to strongly agree (4). Sample items include, “I believe that it is important for my child to know about the history of their own racial background[s]” (personal awareness), “Laws and policies in the United States are applied differently based on people's ethnic-racial identity” (systemic awareness), and “It is important for me to utilize my identity advantages to advocate for others who don't have the same advantages” (accountability).

Early Ethnic-Racial Socialization Practices (EERSP) Scale. The EERSP scale (see Appendix E) was created to assess ERS practices among caregivers of infants and toddlers. The

EERSP initially included 29 items with four subscales: diverse exposure (6 items), intentional teaching (8 items), home environment (9 items), and community environment (4 items). The subscales of diverse exposure and parental teaching included response options on a 4-point rating scale from never (1) to very frequently (4). Sample items include, "I purposefully provide my child with opportunities to interact with individuals from diverse ethnic-racial backgrounds." (diverse exposure), and "I actively intervene and offer alternatives when I encounter my child showing harmful ethnic-racial bias in their talk or play" (intentional teaching). The 4-point rating scale response options for the home environment subscale and the community environment subscale ranged from does not describe me at all (1) to describes me very well (4). Sample items include, "I have dolls or toy people with dark brown skin in my home for my child to play with" (home environment), and "I intentionally choose to have my child in child care and school settings that are ethnically and racially diverse" (community environment).

Convergent Validity Measures. Ethnic identity was assessed with the 17-item Ethnic Identity Scale (Umaña-Taylor et al., 2004; see Appendix F). The Ethnic Identity Scale is comprised of three subscales measuring exploration (7 items), resolution (4 items), and affirmation (6 items). A 4-point rating scale is used to score each item from "Does not describe me at all" (1) to "Describes me very well" (4). Sample items included "I have attended events that have helped me learn more about my ethnicity" (exploration), "I have a clear sense of what my ethnicity means to me" (resolution), and "I wish I were of a different ethnicity" (affirmation, reverse scored; Umaña-Taylor et al., 2004). All negatively worded items were reverse coded so that positive responses indicate awareness of and positive regard for personal ERI.

Colorblind Ideology Measure. The six question Colorblind Ideology Measure (Rohrbach, 2014; Williams & Banerjee, 2021; see Appendix G) explores how parents dismiss

ethnic-racial differences or avoid discussions of ethnic-racial identity. Statements such as, “I like to think I don't see race or ethnicity” are scored from 1 (very strongly disagree) to 6 (very strongly agree). All items were reverse coded so that positive responses indicate a rejection of the colorblind ideology.

Fear of Discussing Race Measure. The five question Fear of Discussing Race Measure (Rohrbach, 2014; Williams & Banerjee, 2021; see Appendix H) measure explores how parental fear of discussing ethnicity and race with their child. Statements such as, “I don't know what to say about race that will lead my child to be unbiased” were scored from 1 (very strongly disagree) to 6 (very strongly agree). All items were reverse coded so that positive responses indicate an openness to discussing race.

Prejudice Concerns Measure. The six question Prejudice Concerns Measure (Rohrbach, 2014; Williams & Banerjee, 2021; see Appendix I) explores parental concerns about their children demonstrating discriminatory behavior (4 questions) or being discriminated against (2 questions). whether their child would be discriminated against. Five of the six questions were included with one (“I am concerned that something my child does or says when talking to someone of a different race or ethnicity might be labeled prejudice*”*) being excluded based on developmental relevance for the sample population. Parents indicated the extent to which they agreed with statements such as “I am concerned that something my child does or says when talking to someone of a different race or ethnicity might be labeled as prejudice”, or “When I see someone of a different race or ethnicity, I worry that they will act prejudiced towards my child.” Items were scored on a 6-point scale from 1 (very strongly disagree) to 6 (very strongly agree). While included in the full caregiver survey for this study, the Prejudice Concerns Measure was not included in the data analysis. This decision was made based on the determination that the

measure was investigating caregiver concerns about child behavior and child experience. These constructs differ from those the caregiver belief constructs that the ERIAL intends to measure, and the Caregiver practices constructs the EERSP intends to measure.

Divergent Validity Measure. The Digital Screen Exposure Questionnaire (DSEQ; Kaur et al., 2021; see Appendix J) examines digital screen exposure duration and behaviors in relation to both educational and non-educational content. For this study, 18 of the DSEQ's 28 items were included. Included items were selected based on developmental relevance for caregivers of infants and toddlers. All negatively worded items were reverse coded so that positive responses indicate the opinion that it is beneficial for toddlers to watch learning shows on digital devices.

Analytic Approach

Exploratory Factor Analysis

Exploratory factor analysis (EFA) was selected as the analytic approach for this study. Mplus version 8.6 (Muthén & Muthén, 2021) was used to conduct an EFA for each measure separately (the 21-items ERIAL scale and the 29-item EERSP scale). Four-point Likert or rating scales were used on all items (see Table 6). Four of the items on the ERIAL scale were worded negatively (item 6, 12, 13, and 15). These items were reverse coded so that all items could be scored positively. The first 15 items on the EERSP scale asked participants to indicate the frequency with which they engaged in each statement (see Table 11). On the EERSP scale items 16-29, participants were asked to indicate the extent to which the item described them (see Table 11). All items on the EERSP scale were worded positively.

All items in both data sets were treated as categorical. Thus, a weighted least squares estimator with mean and variance adjustment (WLSMV) was used for the EFA analysis. The oblique rotation, geomin, was selected based on the assumption that there would be correlation

between the variables (Browne, 2001). Model fit was examined using four fit indices: comparative fit index (CFI), the Tucker-Lewis index (TLI), root mean square error of approximation (RMSEA), and standardized root mean square residual (SRMR). Model fit was considered acceptable with a CFI and TFI greater than or equal to .95, RMSEA less than or equal to .08, and SRMR equal to or less than .08 (Hu & Bentler, 1999).

Based on the underlying theory that informed the measure design, a four-factor solution (Identity, Black Experience, Racism, and Personal Responsibility) or a two-factor solution (Awareness and Accountability) was anticipated for the ERIAL scale. A four-factor solution (Diverse Exposure, Intentional Teaching, Home, Environment, and Community Environment) or a one-factor solution (Action) were anticipated for the EERSP scale.

Results

ERIAL Scale Analysis

A total of 21 items on the initial ERIAL scale were included in the data analysis. The data set had very low missingness (see Table 6) with the lowest covariance coverage being .980. A Full Information Maximum Likelihood (FIML) approach was applied to any items with missing data allowing for all data to be included in the analysis. One case had missing data on all ERIAL scale variables. That case was not included in the analysis resulting in a total of 153 cases being included in the data analysis. Participant responses skewed positively on all items with 88% of responses being in the Agree or Strongly Agree categories (see Table 6).

Table 6

Pre-factor Analysis Descriptive Statistics for All ERIAL Scale Items (n = 153)

	Item	Valid	Missing	Strongly Disagree	Disagree	Agree	Strongly Agree	Mean Score
1	My race is an important aspect of my personal identity.	153	0	6	37	57	53	3.03

Table 6 (cont'd)

Item		Valid	Missing	Strongly Disagree	Disagree	Agree	Strongly Agree	Mean Score
2	My ethnicity is an important aspect of my personal identity.	152	1	7	28	66	51	3.06
3	When I think about all of my personal identities together (race, class, education, income, ability, gender, sexuality, religion, citizenship), I believe that some of them give me advantages and some of them hinder me in American society.	153	0	6	19	63	65	3.22
4	I believe that it is important for my toddler to learn about the ethnic background[s] of our family.	153	0	3	5	66	79	3.44
5	I believe that it is important for my toddler to know about the history of their own racial background[s].	153	0	2	6	58	87	3.50
6	American society treats Black people fairly. (RC)	150	3	5	14	58	73	3.33
7	It is important to remember the experiences of Black people who were enslaved.	153	0	1	3	44	105	3.65
8	Schools should be required to teach all children about Black history.	152	1	2	37	113	152	3.73
9	Black people and White people don't always have the same opportunities in American society.	152	1	3	7	51	91	3.51
10	In the U.S., race and ethnicity impact a person's access to social systems such as education, employment, housing, health care, and public safety.	153	0	1	10	57	85	3.48
11	Laws and policies in the United States are applied differently based on people's ethnic-racial identity.	151	2	2	14	60	75	3.38
12	Racism is not as bad today as it used to be. (RC)	152	1	6	48	69	29	2.80
13	All ethnic and racial groups are treated the same in American society. (RC)	153	0	5	3	54	91	3.51
14	All ethnic and racial groups should be valued equally in our society.	152	1	0	4	29	119	3.76
15	Talking a lot about racism is not helpful. (RC)	151	2	6	11	86	48	3.17

Table 6 (cont'd)

Item		Valid	Missing	Strongly Disagree	Disagree	Agree	Strongly Agree	Mean Score
16	I intentionally learn about race and racism through educational media (e.g., books, social media, movies, television shows).	153	0	6	25	69	53	3.10
17	I learn about the impact of racism by listening to the stories of other people in my life who come from diverse ethnic-racial backgrounds.	153	0	2	14	85	52	3.22
18	It is important for me to utilize my identity advantages to advocate for others who don't have the same advantages.	152	1	1	12	79	60	3.30
19	I actively seek opportunities to enhance my own understanding of racial justice.	152	1	1	28	80	43	3.09
20	Helping my toddler understand the impact of ethnic-racial identity in the United States is a significant priority for me.	153	0	0	18	73	62	3.29
21	I believe that it is important for my toddler to learn about people who have an ethnic-racial background that is different from my toddler's ethnic-racial background.	152	1	1	3	70	78	3.48
		Frequency Totals (%)		66 (2%)	346 (10%)	1387 (41%)	1551 (47%)	Grand Mean 3.31

ERIAL Scale EFA

Results of the EFA analysis using WLSMV with an oblique rotation on the 21-item ERIAL scale indicated that there were 5 eigenvalues greater than 1 (see Table 7). However, examination of the scree plot suggested a 3-factor solution (see Figure 6). Model fit indices were examined. Neither a 1-factor solution or a 2-factor solution had support for retention (1-factor solution: *CFI* = .77; *TLI* = .74; *RMSA* = .18; *SRMR* = .18; 2-factor solution: *CFI* = .89; *TLI* = .86; *RMSA*= .13; *SRMR* = .11). The 3-factor solution had modest support for retention with adequate model fit: *CFI* =.95; *TLI* = .94; *RMSEA* = .09; *SRMR* = .07. Both the 4-factor solution (*CFI* =.97;

TLI = .96; *RMSEA* = .07; *SRMR* = .06) and the 5-factor solution (*CFI* = .98; *TLI*= .97; *RMSEA* = .06; *SRMR* = .05) indicated an improved model fit over the 3-factor solution. However, the 3-factor solution was retained based on better theoretical alignment and the support of the scree plot.

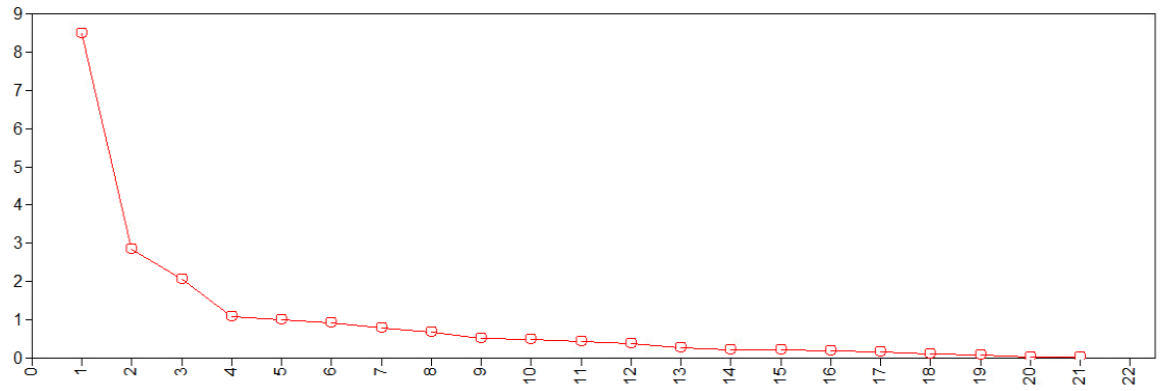
Table 7

ERIAL Scale Eigenvalues Table (n =153)

Eigenvalues	7.43	2.74	1.91	0.80	0.70
% of Variance	43.7	16.1	11.2	8.7	4.7

Figure 6

Scree Plot with 21 ERIAL items.



Interpretation of the factors based on the rotated factor loadings supported the 3-factor solution. However, three items had loadings below .45 (Identities, Slavery, and Racism), and one Item had a loading below .4 (All_Value). Further examination of these items suggested that the wording may have been confusing to participants. For example, the Identities item was intended to ask participants about their awareness of intersectional identities using non-academic terms, but the statement was long and likely difficult to understand (Identities statement: "When I think about all of my personal identities together (race, class, education, income, ability, gender,

sexuality, religion, citizenship), I believe that some of them give me advantages and some of them hinder me in American society"). Similarly, in an effort to improve the word choice, the item statement, "It is important to remember the experience of Black slavery", from the Cultural and Racial Experiences of Socialization (CARES) measure (Edwards & Stevenson, 2015) was adapted to read as, "It is important to remember the experience of the impact of the enslavement of Black people*".* While the intention was to use more human-centered language, the statement may have been less clear to participants. The Racism item statement was likely too subjective as it did not specify referencing overt racism, covert racism, or both. Similarly, the use of the word *should* rather than *are* in the All_Value item ("All ethnic and racial groups should be valued equally in our society".) may have made the item less clear to participants.

The EFA analysis was run again with the four identified items removed. This reduction of items simplified the model and improved the factorial structure (*CFI* = .97; *TLI* = .95; *RMSA*= .091; *SRMR* = .054). The final 3-factor solution included 17 items (see Table 8). The 3 factors were correlated as expected, but the correlation was modest which supports the conclusion that each factor is also distinct from the others (see Table 4).

Table 8

ERIAL Scale Factor Loadings Diagram (n = 153)

Item No.	Items	Factor 1	2	3
1	My race is an important aspect of my personal identity.	**.87**	-.08	-.04
2	My ethnicity is an important aspect of my personal identity.	**.87**	-.19	.01
3	I believe that it is important for my toddler to learn about the ethnic background[s] of our family.	**.83**	.02	.15
4	I believe that it is important for my toddler to know about the history of their own racial background[s].	**.83**	.01	.24
5	American society treats Black people fairly.	.02	**-.84**	.19
6	Schools should be required to teach all children about Black history.	.11	**.57**	.20

Table 8 (cont'd)

Item No.	Items	Factor 1	2	3
7	Black people and White people don't always have the same opportunities in American society.	.02	**.90**	-.14
8	In the U.S., race and ethnicity impact a person's access to social systems such as education, employment, housing, health care, and public safety.	-.03	**.87**	.07
9	Laws and policies in the United States are applied differently based on people's ethnic-racial identity.	.07	**.83**	.02
10	All ethnic and racial groups are treated the same in American society.	-.05	**-.75**	.08
11	Talking a lot about racism is not helpful.	.06	**-.62**	-.07
12	I intentionally learn about race and racism through educational media (e.g., books, social media, movies, television shows).	-.12	.00	**.89**
13	I learn about the impact of racism by listening to the stories of other people in my life who come from diverse ethnic-racial backgrounds.	-.06	.14	**.61**
14	It is important for me to utilize my identity advantages to advocate for others who don't have the same advantages.	-.03	.14	**.76**
15	I actively seek opportunities to enhance my own understanding of racial justice.	.03	-.05	**.94**
16	Helping my toddler understand the impact of ethnic-racial identity in the United States is a significant priority for me.	.15	.17	**.71**
17	I believe that it is important for my toddler to learn about people who have an ethnic-racial background that is different from my toddler's ethnic-racial background.	.07	-.07	**.78**

Note. Bolding indicates highest factor loading.

Table 9

Factor Correlations for Exploratory Factor Analysis of ERIAL Scale (n = 153).

Factor	*1*	*2*	*3*
1 (Personal ERI Awareness)	-		
2 (Systemic ERI Awareness	.24	-	
3 (Accountability to Learning about ERI)	.32	.54	-

Factor 1: Personal ERI Awareness

Factor 1 contained 4 items (items 1, 2, 3, and 4), which appeared to measure the valuing of personal ERI for both the caregiver (e.g., "My race is an important aspect of my personal identity."), and the child (e.g., "I believe that it is important for my toddler to learn about the ethnic background[s] of our family"). Factor 1 was named Personal ERI Awareness, and a follow-up reliability analysis found factor 1 to have strong internal consistency (α = .82).

Factor 2: Systemic ERI Awareness

Factor 2 contained 7 items (items 5, 6, 7, 8, 9, 10, and 11), which appeared to measure an understanding of systemic racism (e.g., " Laws and policies in the United States are applied differently based on people's ethnic-racial identity."), and the impacts of race and ethnicity in relation to social systems in the United States (e.g., "In the U.S., race and ethnicity impact a person's access to social systems such as education, employment, housing, health care, and public safety."). Factor 2 was named Systemic ERI Awareness. A follow-up reliability analysis found factor 2 to have strong internal consistency (α = .84).

Factor 3: Accountability to Learning about ERI

Factor 3 contained 6 items (items 12, 13, 14, 15, 16, and 17), which appeared to measure caregivers' commitment to learning about ERI (e.g., "I intentionally learn about race and racism through educational media (e.g., books, social media, movies, television shows."), and helping their children learn about ERI (e.g. "Helping my toddler understand the impact of ethnic-racial identity in the United States is a significant priority for me."). Factor 3 was named Accountability to Learning about ERI, and a follow-up reliability analysis found factor 3 to have strong internal consistency (α = .87).

EERSP Scale Analysis

A total of 29 items on the initial EERSP scale were included in the data analysis, and the data set included 154 cases. The EERSP scale data set also had very low missingness (see Table 5) with the lowest covariance coverage being .942. The FIML approach was applied to any items with missing data allowing for all data to be included in the analysis. Participant responses skewed positively on all items with 70% of responses being in the Agree or Strongly Agree categories (see Table 10).

Table 10

Pre-factor Analysis Descriptive Statistics for All EERSP Scale Items (n = 154)

	Item	Valid	Missing	Never	Rarely	Frequently	Very Frequently	Mean Score
1	I read books to my toddler in which people from my toddler's ethnic-racial background[s] are represented.	153	1	3	21	73	56	3.19
2	I take my toddler to places/events that reflect my toddler's ethnic-racial heritage (e.g., museums, community events, restaurants, grocery stores).	153	1	5	33	79	36	2.95
3	I read books to my toddler that provide positive representation of Black/African American people.	153	1	1	23	87	42	3.11
4	I take my toddler to places/events that reflect the ethnic-racial heritage of other groups (e.g., museums, community events, restaurants, grocery stores).	153	1	2	42	82	27	2.88
5	When discussing people and images of people with my toddler, I draw attention to and discuss the differences in physical features such as skin color, hair texture, and eye shape.	153	1	22	60	50	21	2.46

Table 10 (cont'd)

	Item	Valid	Missing	Never	Rarely	Frequently	Very Frequently	Mean Score
6	I actively think about ways that I can help my toddler learn about racial justice.	153	1	7	41	77	28	2.82
7	I talk to my toddler about the way people from other ethnic-racial backgrounds look in positive ways (e.g., skin color, hair color/texture).	153	1	14	34	75	30	2.79
8	I purposefully provide my toddler with opportunities to interact with individuals from diverse ethnic-racial backgrounds.	152	2	7	32	66	47	3.01
9	I talk to my toddler about the celebrations and cultural holidays of other ethnic-racial groups.	152	1	10	60	58	24	2.63
10	I help my toddler recognize others' feelings and emotions (e.g., During a peer interaction, I might say, "He's crying, it looks like he's sad." While reading a book, I might say, "She has a big smile, she looks happy.")	153	1	3	8	58	84	3.46
11	When discussing people and images of people with my toddler, I describe the similarities in physical features such as skin color, hair texture, and eye shape. people's ethnic-racial identity.	153	1	17	53	60	23	2.58
12	I include my toddler in cultural celebrations and holidays of my toddler's ethnic-racial group[s].	153	1	7	32	66	48	3.01
13	I actively intervene when I encounter my toddler showing harmful ethnic-racial bias in talk or play.	148	6	19	25	65	39	2.84
14	I talk to my toddler about the way my toddler looks in positive ways (e.g., skin color, hair color/texture).	153	1	3	15	47	88	3.44

Table 10 (cont'd)

	Item	Valid	Missing	Never	Rarely	Frequently	Very Frequently	Mean Score
15	I am intentional about helping my toddler recognize the feelings and emotions of others who have an ethnic-racial background that is different from my toddler. (e.g., During a peer interaction, I might say, "He's crying, it looks like he's sad." While reading a book, I might say, "She has a big smile, she looks happy.")	153	1	3	10	64	76	3.39
	Item	Valid	Missing	Does Not Describe Me at All	Describes Me a Little	Describes Me Well	Describes Me Very Well	Mean Score
16	My home is decorated with things that reflect my toddlers ethnic-racial background[s].	151	3	28	60	45	18	2.35
17	I have dolls or toy people with dark brown skin in my home for my toddler to play with.	150	4	13	23	51	63	3.09
18	I have children's books in my home that include Black people as the main characters of the story.	151	3	3	19	58	71	3.30
19	I intentionally choose to have my child in child care and school settings that are ethnically and racially diverse.	149	5	24	26	48	51	2.85
20	I pay attention to the way that people are represented in the media my toddler watches.	150	4	5	21	61	63	3.21
21	I intentionally choose to live in a neighborhood where my toddler can regularly see and interact with other people who look like my toddler.	150	4	38	45	35	32	2.41
22	I have children's books in my home that include images of Black and Brown people.	151	3	2	18	53	78	3.37

Table 10 (cont'd)

Item		Valid	Missing	Does Not Describe Me at All	Describes Me a Little	Describes Me Well	Describes Me Very Well	Mean Score
23	I have dolls or toy people with white/very light skin in my home for my toddler to play with.	151	3	14	35	57	45	2.88
24	I have photographs that include images of family and friends from diverse ethnic-racial backgrounds in my home that my toddler can see.	150	4	26	30	43	51	2.79
25	I have adult books in my home that include Black people as the main character of the story.	148	6	16	28	48	56	2.97
26	I intentionally choose to live in a neighborhood that has significant ethnic-racial diversity.	149	5	30	44	42	33	2.52
27	I have dolls or toy people with light brown skin in my home for my toddler to play with.	150	4	10	28	66	46	2.99
28	I have adult books in my home that are written by Black authors.	148	6	15	32	47	54	2.95
29	I intentionally choose to have my toddler in childcare and school settings where my toddler can be around other people who look like my toddler.	151	3	38	44	38	31	2.41
		Frequency Totals (%)		361 (9%)	916 (21%)	1651 (39%)	1310 (31%)	Grand Mean 2.82

EERSP Scale EFA

Results of the EFA analysis using WLSMV with an oblique rotation on the 29-item EERSP scale indicated that there were 6 eigenvalues greater than 1 (see Table 11). However, examination of the scree plot suggested a 1-factor solution or a 5-factor solution (see Figure 7). Examination of model fit indices demonstrated strong support for a 6-factor solution (*CFI* = .97; *TLI* = .95; RMSA= .06; *SRMR* = .05), however; a 5-factor solution provided improved

interpretability and better theoretical alignment. A 5-factor solution was also supported by the scree plot and demonstrated adequate model fit: *CFI* = .96; *TLI* = .93; *RMSEA* = .07; *SRMR* = .05.

Table 11

EERSP Scale Eigenvalues

Eigenvalues	8.02	2.64	2.15	1.71	1.25	0.86	0.68
% of Variance	40.6	13.4	10.9	8.7	6.3	4.4	3.4

In the 5-factor solution, five items had loadings below .45 (Intervene, Decor, Div_Media, Div_Photos, and Beautiful). When the EFA analysis was run again with these items removed, the model fit was slightly worse (*CFI* =.95; *TLI* = .92; *RMSEA* = .08; *SRMR* = .05), and two items (L_dolls and LB_dolls) grouped together on one factor in a way that was uninterpretable. Thus, these two items were also removed.

The model fit was improved after the seven identified items were removed (*CFI* =.97; *TLI* = .94; *RMSEA* = .08; *SRMR* = .05), however, the results indicated one additional item (Teach_Just) with a loading under .4. The Teach_Just item was also removed. The final 5-factor solution included 21 items (see Table 12) and demonstrated adequate model fit (*CFI* =.97; *TLI* = .94; *RMSEA* = .08; *SRMR* = .05).

Figure 7

Scree Plot with 29 EERSP Scale Items

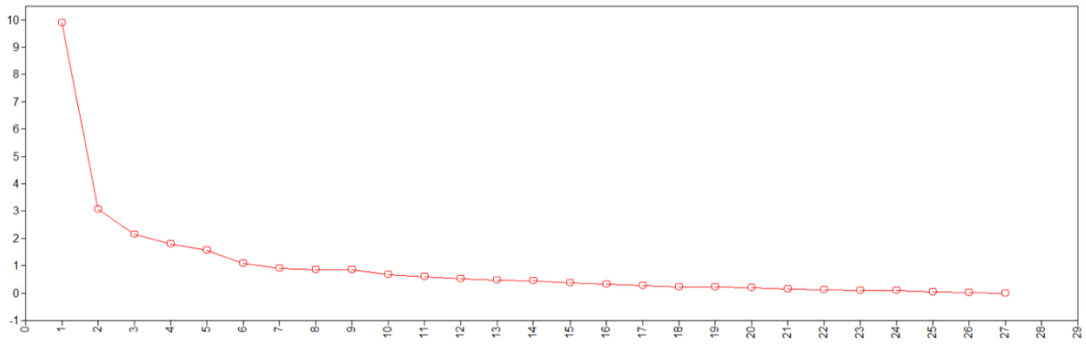


Table 12

EERSP Scale Factor Loadings Diagram

Item No.	Items	Factor 1	2	3	4	5
1	I read books to my toddler in which people from my toddler's ethnic-racial background[s] are represented.	**.50**	.43	.04	-.00	.05
2	I take my toddler to places/events that reflect my toddler's ethnic-racial heritage (e.g., museums, community events, restaurants, grocery stores).	**.72**	.26	.02	-.11	-.11
3	I read books to my toddler that provide positive representation of Black/African American people.	.55	**.58**	.04	.08	.02
4	I include my toddler in cultural celebrations and holidays of my toddler's ethnic-racial group[s].	**.73**	.05	-.20	.16	.00
5	I take my toddler to places/events that reflect the ethnic-racial heritage of other groups (e.g., museums, community events, restaurants, grocery stores).	**.72**	-.01	.02	-.06	.26
6	I purposefully provide my toddler with opportunities to interact with individuals from diverse ethnic-racial backgrounds.	.37	-.07	.04	.13	**.47**
7	I talk to my toddler about the celebrations and cultural holidays of other ethnic-racial groups.	**.63**	-.03	.10	-.03	.21
8	I talk to my toddler about the way people from other ethnic-racial backgrounds look in positive ways (e.g., skin color, hair color/texture).	.31	-.15	**.49**	.07	.11
9	I help my toddler recognize others' feelings and emotions (e.g., During a peer interaction, I might say, "He's crying, it looks like he's sad." While reading a book, I might say, "She has a big smile, she looks happy.")	.03	.03	.14	**.86**	-.02
10	When discussing people and images of people with my toddler, I describe the similarities in physical features such as skin color, hair texture, and eye shape.	.06	.11	**.81**	.11	-.11

Table 12 (cont'd)

Item No.	Items	Factor 1	2	3	4	5
11	When discussing people and images of people with my toddler, I draw attention to and discuss the differences in physical features such as skin color, hair texture, and eye shape.	.31	-.15	**.50**	.07	.19
12	I am intentional about helping my toddler recognize the feelings and emotions of others who have an ethnic-racial background that is different from my toddler. (e.g., During a peer interaction, I might say, "He's crying, it looks like he's sad." While reading a book, I might say, "She has a big smile, she looks happy.")	.15	-.01	-.02	**.85**	13 .
13	I have dolls or toy people with dark brown skin in my home for my toddler to play with.	-.12	**.60**	.21	.26	.13
14	I have children's books in my home that include Black people as the main characters of the story.	.00	**.87**	.03	.25	-.03
15	I have children's books in my home that include images of Black and Brown people.	-.04	**.87**	-.08	.32	-.04
16	I have adult books in my home that are written by Black authors.	.17	**.86**	-.05	-.24	.06
17	I have adult books in my home that include Black people as the main character of the story.	.05	**.82**	.05	-.14	.14
18	I intentionally choose to have my toddler in childcare and school settings that are ethnically and racially diverse.	.16	.08	-.25	.06	**.78**
19	I intentionally choose to live in a neighborhood where my toddler can regularly see and interact with other people who look like my toddler.	-.11	.05	.09	-.06	**.81**
20	I intentionally choose to live in a neighborhood that has significant ethnic-racial diversity.	-.02	-.04	.10	.02	**.81**
21	I intentionally choose to have my toddler in childcare and school settings where my toddler can be around other people who look like my toddler.	-.00	.24	-.06	-.07	**.76**

Note. Bolding indicates highest factor loading.

Similar to the factorial structure of the ERIAL, the 5 factors of the EERSP were correlated yet distinct (see Table 13).

Table 13

*Factor Correlations for Exploratory Factor Analysis of EERSP Scale (*N = *154).*

Factor	*1*	*2*	*3*	*4*	*5*
1 (Color Conscious Exposure)	-				
2 (Affirmation of Blackness)	.21	-			
3 (Discussion of Physical Features)	.50	.18	-		
4 (Cultivation of Empathy)	.18	.01	.23	-	
5 (Curation of Window and Mirror Environments)	.27	.33	.30	.09	-

Factor 1: Color Conscious Exposure

Factor 1 contained 5 items (items 1, 2, 4, 5, and 7), which appeared to measure the intentional exposure to diverse environments based on a color conscious ideology (e.g. "I take my toddler to places/events that reflect the ethnic-racial heritage of other groups (e.g., museums, community events, restaurants, grocery stores."). Factor 1 was named Color Conscious Exposure, and a follow-up reliability analysis found factor 1 to have strong internal consistency (α = .82).

Factor 2: Affirmation of Blackness

Factor 2 contained 6 items (items 3, 13, 14, 15, 16, and 17), which appeared to measure intentional exposure to positive representations of Black/African American people and culture (e.g. "I read books to my toddler that provide positive representation of Black/African American people."). Factor 2 was named Affirmation of Blackness, and a follow-up reliability analysis found factor 2 to have strong internal consistency (α = .87).

Factor 3: Discussion of Physical Features

Factor 3 contained 3 items (items 8, 10, and 11), which appeared to measure clear acknowledgement and discussion of the differences and similarities between the physical features of individuals (e.g., "*I talk to my toddler about the way people from other ethnic-racial backgrounds look in positive ways (e.g., skin color, hair color/texture.*"). Factor 3 was named Discussion of Physical Features, and a follow-up reliability analysis found factor 3 to have excellent internal consistency (α = .81).

Factor 4: Cultivation of Empathy

Factor 4 contained 2 items (items 12 and 9), which appeared to measure caregivers' intentionally teaching their children to recognize the feelings and emotions of others (e.g., "I am intentional about helping my toddler recognize the feelings and emotions of others who have an ethnic-racial background that is different from my toddler."). Factor 4 was named Cultivation of Empathy, and a follow-up reliability analysis found factor 4 to have strong internal consistency (α = .83).

Factor 5: Curation of Window and Mirror Environments

Factor 5 contained 5 items (items 6, 18, 19, 20 and 21), which appeared to measure caregivers' intentional decisions to have their children in environments where they are able to see other who look different than them (windows; e.g., "I intentionally choose to have my toddler in childcare and school settings that are ethnically and racially diverse."), and in environments where their children are able to see others who look similar to them (mirrors; e.g., "*I* intentionally choose to have my toddler in childcare and school settings where my toddler can be around other people who look like my toddler."). Inspired by the work of Rudine Sims Bishop

(1990), Factor 5 was named Curation of Window and Mirror Environments. A follow-up reliability analysis found factor 5 to have excellent internal consistency (α = .82).

Scoring Reliability and Validity of Factors

Sum scores of salient items were used to score factors, and the reliability of each factor was tested using Cronbach's Alpha (Chronbach, 1951) with values greater than .5 considered acceptable and values greater than .8 considered strong. Further, convergent and discriminant validity were tested by examining correlations between each factor and other previously validated measures. Correlation values between .1 and .29 are considered weak, values between .3 and .49 are considered moderate, and values .5 or greater are considered strong (Field, 2024, Gignac & Szodorai 2016).

Reliability and Validity Results

SPSS Statistics for Macintosh, Version 28.0 was utilized to examine the reliability and validity of each factor. All factors on the ERIAL scale demonstrated strong reliability (see Table 14).

Table 14

Reliability of ERIAL Scale Factors

Factor	
1 (Personal ERI Awareness)	.821
2 (Systemic ERI Awareness	.842
3 (Accountability to Learning about ERI)	.870

All factors on the EERSP scale also demonstrated strong reliability with the exception of factor 1 which demonstrated acceptable reliability (see Table 15).

Table 15

Reliability of EERSP Scale Factors

Factor	
1 (Color Conscious Exposure)	.775
2 (Affirmation of Blackness)	.878
3 (Discussion of Physical Features)	.811
4 (Cultivation of Empathy)	.826
5 (Curation of Window and Mirror Environments)	.823

I hypothesized that Personal ERI Awareness would have a moderate, positive correlation with both the Colorblind Ideology Measure and the Fear of Discussing Race Measure based on the assumption that individuals with higher Personal ERI Awareness are less likely to hold a color evasive ideology or demonstrate a fear of discussing race (Rohrbach, 2014; Williams & Banerjee, 2021).

Systemic ERI Awareness was hypothesized to have a weak, positive correlation with the Ethnic Identity Scale because individuals who are more connected to their ethnic identity may also be more aware of systemic implications related to ERI (Umaña-Taylor et al., 2004). Based on the same assumption, a moderate, positive correlation between both the Colorblind Ideology Measure and the Fear of Discussing Race Measure was hypothesized (Rohrbach, 2014; Williams & Banerjee, 2021).

Accountability to Learning about ERI was hypothesized to have a weak, positive correlation with the Ethnic Identity Scale because individuals who are more connected to their personal ERI are likely to demonstrate accountability to ongoing learning about ERI (Umaña-Taylor et al., 2004). Accountability to Learning about ERI is aligned with the rejection of a color evasive ideology and an openness to discussing race. Therefore, a strong, positive correlation between Accountability to Learning about ERI and both the Colorblind Ideology Measure and

the Fear of Discussing Race Measure is hypothesized (Rohrbach, 2014; Williams & Banerjee, 2021).

The Digital Screen Exposure Questionnaire (DESQ; Kaur et al., 2021) was selected as the measure to test divergent validity because caregiver views on their toddlers' use of digital screens are expected to be unrelated to all factors of both measures. Thus, I hypothesized that no correlation would be found between the DESQ and Personal ERI Awareness, Systemic ERI Awareness, nor Accountability to Learning about ERI.

Correlation Hypotheses for the EERSP Scale

Table 16 visualizes the hypothesized validity correlations for the ERIAL scale. Given that a commitment to Color Conscious Exposure, Affirmation of Blackness, and Discussion of Physical Features were all predicted to align with rejecting a color evasive ideology and a fear of discussing race, each of these three factors were hypothesized to have a strong, positive correlation with both the Colorblind Ideology Measure and the Fear of Discussing Race Measure (Rohrbach, 2014; Williams & Banerjee, 2021).

Table 16

Hypothesized Validity Correlations for the ERIAL Scale

Factor	*Comparison Measure*	Hypothesized Correlation
Personal ERI Awareness	Ethnic Identity Scale	+++
	Colorblind Ideology	++
	Fear of Discussing Race	++
	Digital Screen Exposure	x
Systemic ERI Awareness	Ethnic Identity Scale	+
	Colorblind Ideology	++
	Fear of Discussing Race	++
	Digital Screen Exposure	x
Accountability to Learning about ERI	Ethnic Identity Scale	+
	Colorblind Ideology	+++
	Fear of Discussing Race	+++
	Digital Screen Exposure	x

x no correlation, + weak positive correlation, ++ moderate positive correlation, +++ strong positive correlation

While Cultivation of Empathy and Discussion of Physical Features can be connected to constructs of race and ethnicity, the premise of teaching empathy and discussing physical features can also be understood more broadly. Therefore, it was hypothesized that both factors would have a moderate, positive correlation with the Colorblind Ideology Measure and the Fear of Discussing Race Measure (Rohrbach, 2014; Williams & Banerjee, 2021).

Curation of Window and Mirror Environments was hypothesized to have a moderate, positive correlation with the Colorblind Ideology Measure and the Fear of Discussing Race Measure because caregiver intentionality around the environments they curate for their children are likely related these factors, but the Curation of Window and Mirror Environments can also occur despite holding a color evasive ideology and having a fear of discussing race (Rohrbach, 2014; Williams & Banerjee, 2021). For example, caregivers may bring their children to a cultural festival celebrating a background that differs from that of their family while still focusing only on similarities, or they may purchase a book that features ethnically and racially diverse characters while still avoiding direct discussion of ethnic-racial identity with their children.

As with the ERIAL scale, it was hypothesized that no correlation would be found between the DESQ and any of the five EERSP scale factors. Again, this hypothesis assumed that the EERSP scale factors would not be related to caregiver views related to their toddlers' exposure to digital screens.

Table 17

Hypothesized Validity Correlations for the EERSP Scale

Factor	*Comparison Measure*	Hypothesized Correlation
Color Conscious Exposure	Colorblind Ideology	+++
	Fear of Discussing Race	+++
	Digital Screen Exposure	x
Affirmation of Blackness	Colorblind Ideology	++
	Fear of Discussing Race	++
	Digital Screen Exposure	x

Table 17 (cont'd)

Factor	*Comparison Measure*	Hypothesized Correlation
Discussion of Physical Features	Colorblind Ideology	++
	Fear of Discussing Race	++
	Digital Screen Exposure	x
Cultivation of Empathy	Colorblind Ideology	++
	Fear of Discussing Race	++
	Digital Screen Exposure	x
Curation of Window and Mirror Environments	Colorblind Ideology	++
	Fear of Discussing Race	++
	Digital Screen Exposure	x

x no correlation, + weak positive correlation, ++ moderate positive correlation, +++ strong positive correlation

Factor Convergent Validity Results for the ERIAL Scale

Table 18 displays the validity testing results for the ERIAL scale. Consistent with the hypothesis, all factors of the ERIAL scale were positively correlated with the Ethnic Identity Scale (Umaña-Taylor et al., 2004), however; the strength of the correlations was less than anticipated (Personal ERI Awareness: $r = .46$, $p = <.001$; Systemic ERI Awareness: $r = .17$, $p = .032$*; Accountability to Learning about ERI: $r = .28$, $p = <.001$). Contrary to the hypothesis, Personal ERI Awareness was not correlated with the Colorblind Ideology Measure (Rohrbach, 2014; Williams & Banerjee, 2021; $r = .14$, $p = .079$). As predicted, a strong positive correlation was found between Systemic ERI Awareness and the Colorblind Ideology Measure ($r = .56$, $p = <.001$; Rohrbach, 2014; Williams & Banerjee, 2021). Partially consistent with the hypothesis, a moderate positive correlation was found between Accountability to Learning about ERI and the Colorblind Ideology Measure ($r = .35$, $p = <.001$). Consistent with the hypothesis, all three ERIAL factors were positively correlated with the Fear of Discussing Race Measure (Rohrbach, 2014; Williams & Banerjee, 2021), but again the correlation strengths were less than expected (Personal ERI Awareness: $r = .22$, $p = .006$; Systemic ERI Awareness: $r = .29$, $p = <.001$; Accountability to Learning about ERI $r = .36$, $p = <.001$).

Table 18

Validity Correlation Results for the ERIAL Scale

Factor	*Comparison Measure*	*Hypothesized Correlation*	*Resulting Correlation*	*Hypothesis Status*
Personal ERI Awareness	Ethnic Identity Scale	+++	.46**	Partially Supported
	Colorblind Ideology	++	.14	Not Supported
	Fear of Discussing Race	++	.22**	Partially Supported
	Digital Screen Exposure	x	-.11	Fully Supported
Systemic ERI Awareness	Ethnic Identity Scale	++	.17*	Partially Supported
	Colorblind Ideology	+++	.56**	Fully Supported
	Fear of Discussing Race	+++	.29**	Partially Supported
	Digital Screen Exposure	x	.13	Fully Supported
Accountability to Learning about ERI	Ethnic Identity Scale	+	.28**	Fully Supported
	Colorblind Ideology	+++	.35**	Partially Supported
	Fear of Discussing Race	+++	.36**	Partially Supported
	Digital Screen Exposure	x	-.01	Fully Supported

x no correlation, + weak positive correlation, ++ moderate positive correlation, +++ strong positive correlation

***p<.001, *p<.05*

Factor Convergent Validity Results for the EERSP Scale

Table 19 displays the validity testing results for the EERSP. Partially consistent with the hypothesis, Color Conscious Exposure, Affirmation of Blackness, and Cultivation of Empathy were correlated with the Colorblind Ideology Measure (Rohrbach, 2014; Williams & Banerjee, 2021) with less strength than predicted (Color Conscious Exposure: $r = .19$, $p = .023$*; Affirmation of Blackness: $r = .27$, $p = <.001$; Cultivation of Empathy: $r = .28$, $p = <.001$). Contrary to the hypothesis, Discussion of Physical Features ($r = .05$, $p = .516$) and Cultivation of Window and Mirror Environments ($r = .14$, $p = .095$) were not correlated with the Colorblind Ideology Measure (Rohrbach, 2014; Williams & Banerjee). Also, partially consistent with the hypothesis, Color Conscious Exposure, Discussion of Physical Features, Cultivation of Empathy, and Curation of Window and Mirror Environments were correlated with the Fear of Discussing Race Measure (Rohrbach, 2014; Williams & Banerjee, 2021) with less strength than predicted (Color Conscious Exposure: $r = .29$, $p = <.001$; Discussion of Physical Features: $r = .23$, p

= .004**; Cultivation of Empathy: r = .18, p = .031*; Curation of Window and Mirror Environments: r = .21, p = .009**). Contrary to the hypothesis, Affirmation of Blackness was not correlated with the Colorblind Ideology Measure (r = .14, p = .077; Rohrbach, 2014; Williams & Banerjee, 2021).

Table 19

Validity Correlation Results for the EERSP Scale

Factor	*Comparison Measure*	Hypothesized Correlation	*Resulting Correlation*	*Hypothesis Status*
Color Conscious Exposure	Colorblind Ideology	+++	.19*	Partially Supported
	Fear of Discussing Race	+++	.29**	Partially Supported
	Digital Screen Exposure	x	-.09	Fully Supported
Affirmation of Blackness	Colorblind Ideology	++	.27**	Partially Supported
	Fear of Discussing Race	++	.14	Partially Supported
	Digital Screen Exposure	x	.02	Fully Supported
Discussion of Physical Features	Colorblind Ideology	++	.05	Not Supported
	Fear of Discussing Race	++	.23**	Partially Supported
	Digital Screen Exposure	x	-.11	Fully Supported
Cultivation of Empathy	Colorblind Ideology	++	.28**	Partially Supported
	Fear of Discussing Race	++	.18*	Partially Supported
	Digital Screen Exposure	x	.21**	Not Supported
Curation of Window and Mirror Environments	Colorblind Ideology	++	.14	Not Supported
	Fear of Discussing Race	++	.21**	Partially Supported
	Digital Screen Exposure	x	-.12	Fully Supported

x no correlation, + weak positive correlation, ++ moderate positive correlation, +++ strong positive correlation

***p<.001, *p<.05*

Factor Divergent Validity Results for the ERIAL Scale and the EERSP Scale

Consistent with the hypothesis, the Digital Screen Exposure Questionnaire (DSEQ; Kaur et al., 2021) was uncorrelated with all factors of the ERIAL scale (see Table 20; Personal ERI Awareness: r = -.11, p = .16; Systemic ERI Awareness: r = .13, p = .111; Accountability to Learning about ERI r = -.01, p = .861). The DSEQ (Kaur et al., 2021) was also uncorrelated with Color Conscious Exposure, Affirmation of Blackness, Discussion of Physical Features, and Curation of Window and Mirror Environments as anticipated (Color Conscious Exposure: r = -.09, p = .253; Affirmation of Blackness: r = .02, p = .821; Discussion of Physical Features: r =

-.11, p = .177; Curation of Window and Mirror Environments: r = .21, p = .009). However, a weak positive correlation was found between Cultivation of Empathy and the DSEQ (see Table 20; r = .21, p = .009**).

Discussion

This study expanded what is known about ethnic-racial socialization (ERS) during the racial priming period of the lifespan model (Williams et al., 2020) through the development of two new measures and the collection of self-reported data on ERS beliefs and practices among caregivers of toddlers. A major strength of this study was the sample population. The inclusion of caregivers of toddlers from diverse ethnic-racial backgrounds addresses known gaps in the field. The results of this study also further define the construct of Justice-Based Ethnic-Racial Socialization (JBERS) by operationalizing a means of assessing caregiver awareness, accountability, and action regarding ERS.

This study identified initial factor structures for both the Ethnic-Racial Identity and Learning (ERIAL) Scale and the Early Ethnic-Racial Socialization (EERSP) Scale. Beliefs items grouped together mainly as predicted: the predicted Identity factor grouped under Personal ERI Awareness, the predicted factors of Black Experience and Racism collapsed into the single factor of Systemic ERI Awareness, and the predicted factors of Personal Responsibility and Accountability collapsed into the single factor of Accountability to Learning about ERI. Although aligning in slightly different ways than expected, the factorial structure strongly affirmed the underlying theory.

The factorial structure of the EERSP Scale grouped differently than expected and demonstrated more distinct nuances. Although a Diverse Exposure factor was anticipated, the EFA results supported a Color Conscious aspect of Diverse Exposure as well. The items

predicted to group under the Intentional Teaching factor actually grouped into two factors, Discussion of Physical Features and Cultivation of Empathy. It is important to note that the Cultivation of Empathy factor was only comprised of two items. This indicates a need to develop additional items to measure this factor. The predicted Home Environment items did not load as prominently as expected and the Community Environment items organized under the Curation of Window and Mirror Environments factor. Affirmation of Blackness was not an anticipated factor, but its emergence is a powerful demonstration of how capacity to engage in JBERS must include an overt effort to counteract the anti-Black messages that are imbedded in the sociopolitical zeitgeist of U.S. society (e.g., Bleich et al., 2019; Combs et al., 2022; Rowell-Cunsolo et al., 2022). Finally, although the projection that all items might group under one factor, Action, was not the result, all items retained under the final the 5-factor solution were clearly actionable which is consistent with the underlying theory.

The factorial structures of both the ERIAL scale and the EERSP scale were further supported by the strong reliability scores of each factor. However, most of the convergent validity results were minimal when comparing each factor of the ERIAL scale and the EERSP scale to previously validated measures, and some of the correlations were not significant. The results were also inconsistent with hypothesized correlation strength levels with hypothesized correlation strengths consistently higher than the resulting correlation strengths. These results suggest a less than expected construct measurement overlap between the new measures and the previously validated measures. Now that clear factors have been identified for each measure, additional validated measures that more closely reflect the constructs being measured by each factor may need to be tested for convergent validity. Divergent validity was demonstrated when comparing all factors of the ERIAL scale and all factors of the EERSP except for Cultivation of

Empathy. The slight positive correlation with Cultivation of Empathy may suggest that caregivers who demonstrate higher capacity to cultivate empathy among toddlers are also more likely to consider learning shows for toddlers to be beneficial.

Limitations and Future Directions

It is important to interpret the results of the present study in light of several limitations. First, initial bot activity and fraudulent responses prompted a change in the survey distribution method, shifting from an open, anonymous link to a system where participants were required to request an individualized link via email. This adjustment likely created a barrier to participation and may have disincentivized some potential respondents. As a result of the higher effort required to participate in the survey after additional security measures were implemented, there may be an over representation of individuals who were intrinsically motivated to engage in a study related to the topic of social justice. Additionally, the length of the survey may have further discouraged participation.

There was also a lack of variation in some of the demographic categories among the sample. Most participants were college-educated and economically middle class, which may limit the generalizability of the findings. Further, the new measures were tested primarily with caregivers of toddlers who were Black, white, or Black-multiracial, and nearly all participants self-identified as either Black or white. While consistent with the study design, the inclusion of only these ethnic-racial groups also limits the extent to which findings can be generalized across all ethnic-racial populations. The survey was also offered exclusively in English, meaning that non-English speakers are not represented.

Finally, survey responses showed a clear trend toward the positive end of the scales. Given the focus on topics that some people feel uncomfortable talking and thinking about such

as ethnic-racial identity, systemic inequities, and social justice, this trend may reflect an over representation in the sample of participants who were motivated to respond based on interest in these topics. It could also reflect the influence of social desirability bias (Grimm, 2010).

Despite these limitations, findings can inform content development for caregiver education on how to engage in JBERS for the purpose of advancing policy and practice that cultivates inclusive mindsets and disrupts the development of ethnic-racial bias in early childhood. Future directions for this research include the development of a scoring scale for both the ERIAL scale and the EERSP scale along with an adaptation guide for adjusting the language of certain items to reflect additional target populations. For example, the item, “I have children's books in my home that include Black people as the main characters of the story”, might be adapted to be, “I have children's books in my home that include Asian people as the main characters of the story”. Correlation analysis of the data set by demographic factors would also help to explore variation between groups. Further examination of convergent and divergent validity with the inclusion of additional validated measures would also enhance the operationalization of the ERIAL scale and EERSP scale factors.

Ultimately, the development of the ERIAL scale and the EERSP scale for the measurement of caregiver capacity to engage in JBERS offers a path to understanding the types of awareness, beliefs, and practices are required to socialize young children in ways that deepen their sense of interconnected humanity. Further, these new tools provide practical guidance that can inform actionable steps that help both caregivers and the children in their care cultivate ways of thinking and acting that dismantle inequitable and dehumanizing social structures. Everyone who has the privilege of caring for young children also has the responsibility to guide them in ways that will contribute to a more just and liberated future.

REFERENCES

Abaied, J. L., & Perry, S. P. (2021). Socialization of racial ideology by White parents. *Cultural Diversity & Ethnic Minority Psychology*, 27(3), 431–440. https://doi-org.proxy1.cl.msu.edu/10.1037/cdp0000454

Bentley-Edwards, K. L., & Stevenson, H. C. (2016). The multidimensionality of racial/ethnic socialization: Scale construction for the cultural and racial experiences of socialization (cares). *Journal of Child and Family Studies*, 25(1), 96–108. https://doi.org/10.1007/s10826-015-0214-7

Berk, L. E. (2021). *Infants, children, and adolescents, 9th Edition*. https://www.pearson.com/content/one-dot-com/one-dot-com/us/en/higher-education/program.html

Bleich, S. N., Findling, M. G., Casey, L. S., Blendon, R. J., Benson, J. M., SteelFisher, G. K., Sayde, J. M., & Miller, C. (2019). Discrimination in the United States: experiences of Black Americans. *Health Services Research*, 54(S2), 1399–1408. https://doi.org/10.1111/1475-6773.13220

Bigler, R. S., & Liben, L. S. (2007). Developmental intergroup theory: Explaining and reducing children's social stereotyping and prejudice. *Current Directions in Psychological Science*, *16*(3), 162–166. https://doi.org/10.1111/j.1467-8721.2007.00496.x

Blanchard, S. B., Coard, S. I., Hardin, B. J., & Mereoiu, M. (2019). Use of parental racial socialization with African American toddler boys. *Journal of Child and Family Studies*, 28(2), 387–400. https://doi.org/10.1007/s10826-018-1274-2

Bonilla-Silva, E. (2019). Feeling race: theorizing the racial economy of emotions. *American Sociological Review*, 84(1), 1–25. https://doi.org/10.1177/0003122418816958

Branch, C. W., & Newcombe, N. (1986). Racial attitude development among young black children as a function of parental attitudes: A longitudinal and cross-sectional study. *Child Development*, *57*(3), 712–721.

Browne, M. W. (2001). An overview of analytic rotation in exploratory factor analysis. *Multivariate Behavioral Research*, 36, 111–150. doi:10.1207/s15327906mbr3601_05

Byrd, C. M. (2012). The measurement of racial/ethnic identity in children: A critical review. *Journal of Black Psychology*, 38(1), 3–31. https://doi.org/10.1177/0095798410397544

Castelli, L., & Carraro, L. (2020). No evidence of racial discrimination among toddlers. *Psicologia Sociale*, 15(2), 285–292. https://doi.org/10.1482/96849

Castelli, L., Carraro, L., & Valmori, A. (2021). Group status rapidly shapes preschoolers' social judgments in minimal group settings. *Journal of Experimental Child Psychology*, 206, 105102. https://doi.org/10.1016/j.jecp.2021.105102

Cronbach, L. J. (1951). Coefficient Alpha and the Internal Structure of Tests. *Psychometrika*, 16, 297-334.

Combs, B. H. (2022). *Bodies out of Place: Theorizing anti-blackness in U.S. society*. University of Georgia Press.

Contreras, M. M., Osborne, K. R., Walsdorf, A. A., Anderson, L. A., Caughy, M. O., & Owen, M. T. (2021). Holding both truths: Early dynamics of ethnic-racial socialization and children's behavior adjustment in African American and Latinx families. *Journal of Social Issues*, 77(4), 987–1013. https://doi.org/10.1111/josi.12496

Creswell, J. W., & Poth, C. N. (2016). *Qualitative inquiry and research design: choosing among five approaches.* SAGE Publications.

Curenton, S. M., Iruka, I. U., Humphries, M., Jensen, B., Durden, T., Rochester, S. E., Sims, J., Whittaker, J. V., & Kinzie, M. B. (2020). Validity for the assessing classroom sociocultural equity scale (ACSES) in early childhood classrooms. *Early Education and Development,* 31(2), 284–303. https://doi.org/10.1080/10409289.2019.1611331

Derman-Sparks, L., & Edwards, J. O. (2020). *Anti-bias education for young children and ourselves.* (2nd edition). The National Association for the Education of Young Children.

Dunbar, A. S., Leerkes, E. M., Coard, S. I., Supple, A. J., & Calkins, S. (2017). An integrative conceptual model of parental racial/ethnic and emotion socialization and links to children's social-emotional development among African American families. *Child Development Perspectives*, 11(1), 16–22. https://doi.org/10.1111/cdep.12218

Efird, C. R., Wilkins, C. L., & Versey, H. S. (2024). Whiteness hurts society: How whiteness shapes mental, physical, and social health outcomes. *Journal of Social Issues*, 80(1), 53–79. https://doi.org/10.1111/josi.12598

Elenbaas, L., & Killen, M. (2016). Age-related changes in children's associations of economic resources and race. *Frontiers in Psychology*, 7. https://doi.org/10.3389/fpsyg.2016.00884

Fassbender, I., Teubert, M., & Lohaus, A. (2016). The development of preferences for own-race versus other-race faces in 3-, 6- and 9-month-old Caucasian infants. *European Journal of Developmental Psychology*, 13(1), 152–165. https://doi.org/10.1080/17405629.2015.1073585

Ferman, B. (2020). The role of social justice frameworks in an era of neoliberalism: Lessons from youth activism. *Journal of Urban Affairs*, 43(3), 436–448. https://doi.org/10.1080/07352166.2020.1734012

Field, A. (2024). *Discovering Statistics Using IBM SPSS Statistics*. SAGE Publications.

Freire, P. (1978). Pedagogy of the Oppressed*. In *Toward a Sociology of Education*. Routledge.

García Coll, C., Lamberty, G., Jenkins, R., McAdoo, H. P., Crnic, K., Wasik, B. H., & Vázquez García, H. (1996). An integrative model for the study of developmental competencies in minority children. *Child Development*, *67*(5), 1891–1914.

Gignac, G. E., & Szodorai, E. T. (2016). Effect size guidelines for individual differences researchers. *Personality and Individual Differences*, 102, 74–78. https://doi.org/10.1016/j.paid.2016.06.069

Gillen-O'Neel, C., Huynh, V. W., Hazelbaker, T., & Harrison, A. (2022). From kindness and diversity to justice and action: White parents' ethnic–racial socialization goals. *Journal of Family Issues*, 43(4), 944–973. https://doi.org/10.1177/0192513X21996392

Gilliam, W. (2005). *Prekindergarteners left behind: Expulsion rates in state prekindergarten systems.*

Grimm, P. (2010). Social Desirability Bias. In *Wiley International Encyclopedia of Marketing*. John Wiley & Sons, Ltd. https://doi.org/10.1002/9781444316568.wiem02057

Hagerman, M. A. (2014). White families and race: Colour-blind and colour-conscious approaches to white racial socialization. *Ethnic and Racial Studies*, 37(14), 2598–2614. https://doi.org/10.1080/01419870.2013.848289

Harris, L., & Cossins, D. (2020). The roots of racism. *New Scientist*, 247(3297), 43–45. https://doi.org/10.1016/S0262-4079(20)31506-2

Hayden, A. N. (2012). *The role of racial information in infant face processing* (1266165583; 2012-99200-012; Issue AAI3491662).

Hazelbaker, T., Brown, C. S., Nenadal, L., & Mistry, R. (2021). *Raising white resisters: Studying the development of anti-racist white children and youth.* OSF. https://doi.org/10.31234/osf.io/ej9a5

Hazelbaker, T., Brown, C. S., Nenadal, L., & Mistry, R. S. (2022). Fostering anti-racism in white children and youth: Development within contexts. *American Psychologist*. https://doi-org.proxy2.cl.msu.edu/10.1037/amp0000948

Heron-Delaney, M., Damon, F., Quinn, P. C., Meary, D., Xiao, N. G., Lee, K., & Pascalis, O. (2017). An adult face bias in infants that is modulated by face race. *International Journal of Behavioral Development*, *41*(5), 581–587. https://doi.org/10.1177/0165025416651735

Hu, L., & Bentler, P. M. (1999). Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. *Structural Equation Modeling: A Multidisciplinary Journal*, 6(1), 1–55. https://doi.org/10.1080/10705519909540118

Hughes, D., & Chen, L. (1997). When and what parents tell children about race: An examination of race-related socialization among African American families. *Applied Developmental Science*, *1*(4), 200–214. https://doi.org/10.1207/s1532480xads0104_4

Hughes, D., & Chen, L. (1999). Parents' race-related messages to children: A developmental perspective. In C. Tamis-Lemonda, & L. Balter (Eds.), *Child psychology: A handbook of contemporary issues.* New York University Press.

Hughes, D., Rodriguez, J., Smith, E. P., Johnson, D. J., Stevenson, H. C., & Spicer, P. (2006). Parents' ethnic-racial socialization practices: A review of research and directions for future study. *Developmental Psychology*, *42*(5), 747–770. https://doi.org/10.1037/0012-1649.42.5.747

Hughes, J. M., Bigler, R. S., & Levy, S. R. (2007). Consequences of learning about historical racism among European American and African American children. *Child Development*, 78(6), 1689–1705. https://doi.org/10.1111/j.1467-8624.2007.01096.x

Hughes, D., Cox, B., & Das, S. (2023). Growing up, learning race: An integration of research on cognitive mechanisms and socialization in context. *Annual Review of Developmental Psychology*, 5(Volume 5, 2023), 137–167. https://doi.org/10.1146/annurev-devpsych-120321-015718

Iruka, I., Curenton, S., Durden, T., & Escayg, K.-A. (2020). *Don't look away: Embracing anti-bias classrooms*. https://www.kaplanco.com/product/33461/dont-look-away-embracing-anti-bias-classrooms?c=16%7CTR1026

Jemal, A., & Bussey, S.R., (2022). Liberatory education: We are the ones we've been waiting for. In M. Sykes, & K. Ostendorf. *Child care justice: Transforming the system of care for young children.* (pp. 20-47) Teachers College Press.

Katz, P. A. (2003). *Racists or tolerant multiculturalists? How do they begin? https://*doi=10.1037%2F0003-066X.58.11.897b

Kaur, N., Gupta, M., Kiran, T., Malhi, P., & Grover, S. (2021). Development and evaluation of the digital-screen exposure questionnaire (DSEQ) for young children. PLOS ONE, 16(6), e0253313. https://doi.org/10.1371/journal.pone.0253313

Kelly, D., Quinn, P., Slater, A., Lee, K., Gibson, A., Smith, M., Ge, L., & Pascalis, O. (2005). Three-month-olds, but not newborns, prefer own-race faces. *Developmental Science*, *8*(6), F31–F36. https://doi.org/10.1111/j.1467-7687.2005.0434a.x

Kendi, I. X. (2019). *How to be an antiracist* (First Edition). One World.

Kinzler, K. D., & Spelke, E. S. (2011). Do infants show social preferences for people differing in race? *Cognition*, *119*(1), 1–9. https://doi.org/10.1016/j.cognition.2010.10.019

Krasotkina, A., Goetz, A., Hoehle, B., & Schwarzer, G. (2018). Perceptual narrowing in speech and face recognition: evidence for intra-individual cross-domain relations. *Frontiers In Psychology*, *9*. https://doi.org/10.3389/fpsyg.2018.01711

Mitsch, Maryssa Kucskar, et al. "Social emotional development and early childhood mental health: special education and social work collaboration." *Handbook of research on interdisciplinary preparation for equitable special education*, edited by Dena D. Slanda and Lindsey Pike, IGI Global, 2023, pp. 468-494. https://doi-org.proxy1.cl.msu.edu/10.4018/978-1-6684-6438-0.ch023

Liu, S., Xiao, W. S., Xiao, N. G., Quinn, P. C., Zhang, Y., Chen, H., Ge, L., Pascalis, O., & Lee, K. (2015). Development of visual preference for own- versus other-race faces in infancy. *Developmental Psychology*, *51*(4), 500–511. https://doi.org/10.1037/a0038835

Malat, J., Mayorga-Gallo, S., & Williams, D. R. (2018). The effects of whiteness on the health of whites in the USA. *Social Science & Medicine,* 199, 148–156. https://doi.org/10.1016/j.socscimed.2017.06.034

Mandalaywala, T. M., Tai, C., & Rhodes, M. (2020). Children's use of race and gender as cues to social status. *PLOS ONE*, 15(6), e0234398. https://doi.org/10.1371/journal.pone.0234398

Marcelo, A. K., & Yates, T. M. (2018). Young children's ethnic–racial identity moderates the impact of early discrimination experiences on child behavior problems. *Cultural Diversity & Ethnic Minority Psychology*, 25(2), 253–265. https://doi.org/10.1037/cdp0000220

McConaughy, S. H., & Achenbach, T. M. (2004). *Manual for the test observation form for ages 2-18.* ASEBA.

Meltzoff, A., Gilliam, W.S. (2024). Young children & implicit racial biases. *Daedalus* 153 (1): 65–83. doi: https://doi.org/10.1162/daed_a_02049

Mesman, J., Bruijn, Y. de, Veen, D. van, Pektas, F., & Emmen, R. A. G. (2022). Maternal color-consciousness is related to more positive and less negative attitudes toward ethnic-racial outgroups in children in White Dutch families. *Child Development,* 93(3), 668. https://doi.org/10.1111/cdev.13784

Murray, C. B., & Mandara, J. (2002). Racial identity development in African American children: Cognitive and experiential antecedents. In Black children: *Social, educational, and parental environments, 2nd ed* (pp. 73–96). Sage Publications, Inc.

Murry, V. M., Berkel, C., Brody, G. H., Gibbons, M., & Gibbons, F. X. (2007). The strong African American families program: Longitudinal pathways to sexual risk reduction. *Journal of Adolescent Health*, 41(4), 333–342. https://doi.org/10.1016/j.jadohealth.2007.04.003

Muthén, L. K., & Muthén, B. O. (2017). *Mplus: Statistical Analysis with Latent Variables: User's Guide (Version 8)*. Los Angeles, CA: Authors.

Njoroge, W., Benton, T., Lewis, M. L., & Njoroge, N. M. (2009). What are infants learning about race? A look at a sample of infants from multiple racial groups. *Infant Mental Health Journal*, *30*(5), 549–567. https://doi.org/10.1002/imhj.20228

Pahlke, E., Bigler, R. S., & Suizzo, M. A. (2012). Relations between colorblind socialization and children's racial bias: Evidence from European American mothers and their preschool children. *Child Development*, 83(4), 1164–1179. https://doi.org/10.1111/j.1467-8624.2012.01770.x

Perszyk, D. R., Lei, R. F., Bodenhausen, G. V., Richeson, J. A., & Waxman, S. R. (2019). Bias at the intersection of race and gender: Evidence from preschool-aged children. *Developmental Science*, *22*(3), e12788. https://doi.org/10.1111/desc.12788

Quintana, S. M. (1998). Children's developmental understanding of ethnicity and race. *Applied & Preventive Psychology*, *7*(1), 27–45. http://dx.doi.org.proxy2.cl.msu.edu/10.1016/S0962-1849(98)80020-6

Repacholi, B. M., & Gopnik, A. (1997). Early reasoning about desires: Evidence from 14- and 18-month-olds. *Developmental Psychology*, 33(1), 12–21. https://doi.org/10.1037//0012-1649.33.1.12

Rivas-Drake, D., Seaton, E. K., Markstrom, C., Quintana, S., Syed, M., Lee, R. M., Schwartz, S. J., Umaña-Taylor, A. J., French, S., Yip, T., & Ethnic and Racial Identity in the 21st Century Study Group. (2014). Ethnic and racial identity in adolescence: Implications for psychosocial, academic, and health outcomes. *Child Development*, *85*(1), 40–57. https://doi.org/10.1111/cdev.12200

Rochat, P. (2003). Five levels of self-awareness as they unfold early in life. *Consciousness and Cognition*, *12*(4), 717–731. https://doi.org/10.1016/S1053-8100(03)00081-3

Rochat, P., & Striano, T. (2000). Perceived self in infancy. I*nfant Behavior and Development*, 23(3–4), 513–530. https://doi.org/10.1016/S0163-6383(01)00055-8

Rogers, L. O., Kiang, L., White, L., Calzada, E. J., Umaña-Taylor, A. J., Byrd, C., Williams, C. D., Marks, A., & Whitesell, N. (2020). Persistent concerns: Questions for research on ethnic-racial identity development. *Research in Human Development*, *17*(2–3), 130–153. https://doi.org/10.1080/15427609.2020.1831881

Rohrbach, J.M. (2014) Maternal behavior during cross-race interactions and children's racial attitudes: The nonverbal transmission of prejudice (Doctoral dissertation). Retrieved from UT Electronic Theses and Dissertation.

Rowell-Cunsolo, T. L., Bellerose, M., & Haile, R. (2022). Hazards of anti-Blackness in the United States. I*nternational Journal of Social Welfare*, 31(4), 520–528. https://doi.org/10.1111/ijsw.12547

Serrano-Villar, M., & Calzada, E. J. (2016). Ethnic identity: Evidence of protective effects for young, Latino children. *Journal of Applied Developmental Psychology*, 42, 21–30. https://doi.org/10.1016/j.appdev.2015.11.002

Spencer, M. B., Dupree, D., & Hartmann, T. (1997). A phenomenological variant of ecological systems theory (PVEST): A self-organization perspective in context. *Development and Psychopathology*, *9*(4), 817–833. https://doi.org/10.1017/S0954579497001454

Scott, K. E., Huth, N., Fukuda, E., Shutts, K., & Devine, P. G. (2024). Empowering behaviors to address race with kids (EmBARK): A racial socialization program for white families. *Journal of Applied Developmental Psychology*, 94, 101696. https://doi.org/10.1016/j.appdev.2024.101696

Swanson, D. P., Cunningham, M., Youngblood, J., & Spencer, M. B. (2009). Racial identity development during childhood. Handbook of African American psychology, 269-281.

Umaña-Taylor, A. J., Quintana, S. M., Lee, R. M., Cross Jr., W. E., Rivas-Drake, D., Schwartz, S. J., Syed, M., Yip, T., Seaton, E., & Ethnic and Racial Identity in the 21st Century Study Group. (2014). Ethnic and racial identity during adolescence and into young adulthood: An integrated conceptualization. *Child Development*, *85*(1), 21–39. https://doi.org/10.1111/cdev.12196

Umaña-Taylor, A. J., Yazedjian, A., & Bámaca-Gómez, M. (2004). Developing the ethnic identity scale using Eriksonian and social identity perspectives. *Identity*, 4(1), 9–38. https://doi.org/10.1207/S1532706XID0401_2

Waxman, S. R. (2021). Racial awareness and bias begin early: Developmental entry points, challenges, and a call to action. *Perspectives on Psychological Science*, *16*(5), 893–902. https://doi.org/10.1177/17456916211026968

White-Johnson, R. L., Ford, K. R., & Sellers, R. M. (2010). Parental racial socialization profiles: Association with demographic factors, racial discrimination, childhood socialization, and racial identity. *Cultural Diversity & Ethnic Minority Psychology*, 16(2), 237–247. https://doi.org/10.1037/a0016111

Wilkerson, I. (2020). *Caste: The origins of our discontents*. Random House Publishing Group.

Williams, A. D., & Banerjee, M. (2021). Ethnic-racial socialization among Black, Latinx, and White parents of elementary school-age children. *Journal of Social Issues*, 77(4), 1037–1062. https://doi.org/10.1111/josi.12493

Williams, C. D., Byrd, C. M., Quintana, S. M., Anicama, C., Kiang, L., Umaña-Taylor, A. J., Calzada, E. J., Pabón Gautier, M., Ejesi, K., Tuitt, N. R., Martinez-Fuentes, S., White, L., Marks, A., Rogers, L. O., & Whitesell, N. (2020). A lifespan model of ethnic-racial identity. *Research in Human Development*, *17*(2–3), 99–129. https://doi.org/10.1080/15427609.2020.1831882

Woolverton, G. A., & Marks, A. K. (2022). An integrative model for the development of anti-racist behavior in white adolescents. *Journal of Adolescent Research*, 39(4), 917-949. https://doi-org.proxy1.cl.msu.edu/10.1177/07435584221091492

Zubler, J. M., Wiggins, L. D., Macias, M. M., Whitaker, T. M., Shaw, J. S., Squires, J. K., Pajek, J. A., Wolf, R. B., Slaughter, K. S., Broughton, A. S., Gerndt, K. L., Mlodoch, B. J., & Lipkin, P. H. (2022). Evidence-informed milestones for developmental surveillance tools. *Pediatrics*, *149*(3), e2021052138. https://doi.org/10.1542/peds.2021-052138

Zucker, J. K., & Patterson, M. M. (2018). Racial socialization practices among white American parents: Relations to racial attitudes, racial identity, and school diversity. *Journal of Family Issues*, 39(16), 3903–3930. https://doi.org/10.1177/0192513X18800766

APPENDIX A: ITEM ADAPTATION

Table 20

Item Adaptation

Measure	Original Items	Adapted Items	Adapted Item Scale Placement
Parent Experiences of Racial Socialization (PERS) Stevenson, 1999, 2002	American society is fair toward Black people.	American society treats Black people fairly.	ERIAL Systemic Awareness Subscale
	All races are equal.	All ethnic and racial groups are treated the same in American society.	ERIAL Systemic Awareness Subscale
		All ethnic and racial groups should have equal value in American society.	ERIAL Systemic Awareness Subscale
	Too much talk about racism will keep you from reaching your goals.	Talking too much about racism is not helpful.	ERIAL Systemic Awareness Subscale
	Blacks don't always have the same opportunities as Whites.	Black people and White people don't always have the same opportunities in American society.	ERIAL Systemic Awareness Subscale
Cultural and Racial Experiences of Socialization (CARES) Edwards and Stevenson, 2015	It is important to remember the experience of Black slavery.	It is important to remember the experience of the impact of the enslavement of Black people.	ERIAL Systemic Awareness Subscale
	Schools should be required to teach all children about Black history.	Original item maintained.	ERIAL Systemic Awareness Subscale
	Racism is not as bad today as it used to be.	Original item maintained.	ERIAL Systemic Awareness Subscale
Cultural Socialization Behaviors Measure Derlan et al., 2016	I read books to my child in which people from our ethnic/cultural background are represented.	I read books to my child in which people from my child's ethnic-racial background are represented.	EERSP Diverse Exposure Subscale
	My home is decorated with things that reflect our ethnic/cultural background.	My home is decorated with things that reflect my child's ethnic-racial background.	EERSP Home Environment Subscale

Table 20 (cont'd)

Measure	Original Items	Adapted Items	Adapted Item Scale Placement
Emergence of Ethnic-Racial Socialization Contreras et al., 2022	Taken your child to places/events that reflect his/her racial or ethnic heritage	I take my child to places/events that reflect my child's ethnic-racial heritage.	EERSP Diverse Exposure Subscale
		I take my child to places/events that reflect the ethnic-racial heritage of other groups.	EERSP Diverse Exposure Subscale
	Celebrated cultural holidays of your ethnic/racial group	I include my child in celebrations and cultural holidays of my child's ethnic-racial group.	EERSP Diverse Exposure Subscale
	Done or said other things to encourage your child to learn about the history/traditions of your ethnic/racial group	I talk to my child about the celebrations and cultural holidays of other ethnic-racial groups.	EERSP Diverse Exposure Subscale
Afrocentric Home Environment Caughy et al., 2022	Child has African American toy: this item is parallel to HOME items 1-6 (items about toys to learn various things in the learning simulation subscale).	I have dolls or toy people with light brown skin in my home for my child to play with.	EERSP Home Environment Subscale
		I have dolls or toy people with dark brown skin in my home for my child to play with.	EERSP Home Environment Subscale
		I have dolls or toy people with white/very light skin in my home for my child to play with.	EERSP Home Environment Subscale
	African American children's books (n = 3): This item is parallel to HOME item 7 (10 children's books) in the learning simulation subscale.	I have children's books in my home that include images of Black and Brown people.	EERSP Home Environment Subscale
		I have children's books in my home that include Black people as the main characters of the story.	EERSP Home Environment Subscale

Table 20 (cont'd)

Measure	Original Items	Adapted Items	Adapted Item Scale Placement
	Ten African American books: (adult and child books total 10 or more): This item is parallel to HOME item 8 (10 books visible in the home) and is intended in general to identify whether the family values having books in general and about African Americans specifically.	I have adult books in my home that include Black people as the main character of the story.	EERSP Home Environment Subscale
		I have adult books in my home that are written by Black authors.	EERSP Home Environment Subscale
		I intentionally learn about race and racism through educational media (e.g. books, social media, movies, television shows).	ERIAL Accountability Subscale
	Pictures of family members: this item reflects several Afrocentric dimensions including interpersonal orientation (connection to people over objects, preference for personal rather than the material), "communalism" (value of cooperation and collectivism over competition and individualism), and "interconnectedness" (connecting the past, present, and future).	I have photographs that include images of family and friends from diverse ethnic-racial backgrounds in my home that my child can see.	EERSP Home Environment Subscale
Multiracial Youth Socialization Scale Atkin et. al, 2022	Told me to be proud of the way I look (e.g., skin color, hair color/type)	I talk to my child about the way they look (e.g., skin color, hair color/texture) in positive ways.	EERSP Intentional Teaching Subscale

APPENDIX B: UPDATED RECRUITMENT FLYER

Figure 8

Updated Recruitment Flyer

APPENDIX C: DEMOGRAPHIC ITEMS

1. What is your race/ethnicity? (Check All That Apply),
    a. Black/African American
    b. Asian
    c. American Indian
    d. Alaska Native
    e. Middle Eastern
    f. North African
    g. Native Hawaiian or Pacific Islander
    h. White/Euro-American
    i. Hispanic/Latino/é
    j. Another Term (text option)

2. What term do you use to describe your race/ethnicity?
   (text option)

3. What is your age?
   (text option)

4. What is your highest level of education?
    a. Less than High School
    b. High School/GED
    c. Some College (no degree)
    d. Associate degree (e.g. AA, AS)
    e. Bachelor's degree (e.g. BA, BS)
    f. Master's degree (e.g. MA, MS, MEd)
    g. Professional degree (e.g. MD, DDS, DVM)
    h. Doctorate (e.g. PhD, EdD)

5. What is your annual household income?

6. Number of children in the household,
    a. One
    b. Two
    c. Three
    d. Four or more

Some of the questions on this survey will be about your toddler (12 to 36 months old). If you have more than one toddler, decide which one you will think of when answering the questions and think of that same child for all of your responses. What is the first name of your toddler? (text option)

7. What is your relationship to [child's name]?
    a. Parent
    b. Grandparent
    c. Another Term (text option)

8. What is [child]'s sex/gender?
    a. Girl
    b. Boy
    c. Non-Binary
    d. Another Term (text option)

9. What is [child]'s birthdate?
   (date option)

10. What is your child's race/ethnicity? (Check All That Apply)
    a. Black/African American
    b. Asian
    c. American Indian
    d. Alaska Native
    e. Middle Eastern
    f. North African
    g. Native Hawaiian or Pacific Islander
    h. White/Euro-American
    i. Hispanic/Latino/é
    j. Another Term (text option)

11. What term do you use to describe your child's race/ethnicity?
    (text option)

12. Is there a second term that you use to describe your child's race/ethnicity?
    (text option)

13. What is the primary language you use when speaking with [Child] at home?
    (text option)

14. Do you speak any other languages at home with [Child]?
    (text option)

15. Is your child adopted?
    a. Yes
    b. No

16. Is your child currently in your care as a foster child?
    a. Yes
    b. No

17. What is your zip code?
    (text option)

APPENDIX D: ETHNIC-RACIAL IDENTITY AWARENESS AND LEARNING (ERIAL) SCALE

1. My race is an important aspect of my personal identity.
2. My ethnicity is an important aspect of my personal identity.
3. I believe that it is important for my toddler to learn about the ethnic background[s] of our family.
4. I believe that it is important for my toddler to know about the history of their own racial background[s].
5. American society treats Black people fairly.
6. Schools should be required to teach all children about Black history.
7. Black people and White people don't always have the same opportunities in American society.
8. In the U.S., race and ethnicity impact a person's access to social systems such as education, employment, housing, health care, and public safety.
9. Laws and policies in the United States are applied differently based on people's ethnic-racial identity.
10. All ethnic and racial groups are treated the same in American society.
11. Talking a lot about racism is not helpful.
12. I intentionally learn about race and racism through educational media (e.g., books, social media, movies, television shows).
13. I learn about the impact of racism by listening to the stories of other people in my life who come from diverse ethnic-racial backgrounds.
14. It is important for me to utilize my identity advantages to advocate for others who don't have the same advantages.
15. I actively seek opportunities to enhance my own understanding of racial justice.
16. Helping my toddler understand the impact of ethnic-racial identity in the United States is a significant priority for me.
17. I believe that it is important for my toddler to learn about people who have an ethnic-racial background that is different from my toddler's ethnic-racial background.

APPENDIX E: EARLY ETHNIC-RACIAL SOCIALIZATION PRACTICES (EERSP) SCALE

1. I read books to my toddler in which people from my toddler's ethnic-racial background[s] are represented.

2. I take my toddler to places/events that reflect my toddler's ethnic-racial heritage (e.g., museums, community events, restaurants, grocery stores).

3. I read books to my toddler that provide positive representation of Black/African American people.

4. I include my toddler in cultural celebrations and holidays of my toddler's ethnic-racial group[s].

5. I take my toddler to places/events that reflect the ethnic-racial heritage of other groups (e.g., museums, community events, restaurants, grocery stores).

6. I purposefully provide my toddler with opportunities to interact with individuals from diverse ethnic-racial backgrounds.

7. I talk to my toddler about the celebrations and cultural holidays of other ethnic-racial groups.

8. I talk to my toddler about the way people from other ethnic-racial backgrounds look in positive ways (e.g., skin color, hair color/texture).

9. I help my toddler recognize others' feelings and emotions (e.g., During a peer interaction, I might say, "He's crying, it looks like he's sad." While reading a book, I might say, "She has a big smile, she looks happy.")

10. When discussing people and images of people with my toddler, I describe the similarities in physical features such as skin color, hair texture, and eye shape.

11. When discussing people and images of people with my toddler, I draw attention to and discuss the differences in physical features such as skin color, hair texture, and eye shape.

12. I am intentional about helping my toddler recognize the feelings and emotions of others who have an ethnic-racial background that is different from my toddler. (e.g., During a peer interaction, I might say, "He's crying, it looks like he's sad." While reading a book, I might say, "She has a big smile, she looks happy.")

13. I have dolls or toy people with dark brown skin in my home for my toddler to play with.

14. I have children's books in my home that include Black people as the main characters of the story.

15. I have children's books in my home that include images of Black and Brown people.

16. I have adult books in my home that are written by Black authors.

17. I have adult books in my home that include Black people as the main character of the story.

18. I intentionally choose to have my toddler in childcare and school settings that are ethnically and racially diverse.

19. I intentionally choose to live in a neighborhood where my toddler can regularly see and interact with other people who look like my toddler.

20. I intentionally choose to live in a neighborhood that has significant ethnic-racial diversity.

21. I intentionally choose to have my toddler in childcare and school settings where my toddler can be around other people who look like my toddler.

APPENDIX F: ETHNIC IDENTITY SCALE

Ethnic Identity Scale (Umaña-Taylor, Yazedjian, & Bámaca-Gómez, 2004)

The U.S. is made up of people of various ethnicities. Ethnicity refers to cultural traditions, beliefs, and behaviors that are passed down through generations. Some examples of the ethnicities that people may identify with are Mexican, Cuban, Nicaraguan, Chinese, Taiwanese, Filipino, Jamaican, African American, Haitian, Italian, Irish, and German. In addition, some people may identify with more than one ethnicity. When you are answering the following questions, we'd like you to think about what YOU consider your ethnicity to be.

Please write what you consider to be your ethnicity here _____ and refer to this ethnicity as you answer the questions below.

Table 21

Ethnic Identity Scale

Items	Does not describe me at all	Describes me a little	Describes me well	Describes me very well
1. My feelings about my ethnicity are mostly negative. [RC]	1	2	3	4
2. I have not participated in any activities that would teach me about my ethnicity. [RC]	1	2	3	4
3. I am clear about what my ethnicity means to me.	1	2	3	4
4. I have experienced things that reflect my ethnicity, such as eating food, listening to music, and watching movies.	1	2	3	4
5. I have attended events that have helped me learn more about my ethnicity	1	2	3	4
6. I have read books/magazines/newspapers or other materials that have taught me about my ethnicity.	1	2	3	4
7. I feel negatively about my ethnicity. [RC]	1	2	3	4

Table 21 (cont'd)

Items	Does not describe me at all	Describes me a little	Describes me well	Describes me very well
8. I have participated in activities that have exposed me to my ethnicity	1	2	3	4
9. I wish I were of a different ethnicity [RC]	1	2	3	4
10. I am not happy with my ethnicity. [RC]	1	2	3	4
11. I have learned about my ethnicity by doing things such as reading (books, magazines, newspapers), searching the internet, or keeping up with current events.	1	2	3	4
12. I understand how I feel about my ethnicity.	1	2	3	4
13. If I could choose, I would prefer to be of a different ethnicity. [RC]	1	2	3	4
14. I know what my ethnicity means to me.	1	2	3	4
15. I have participated in activities that have taught me about my ethnicity.	1	2	3	4
16. I dislike my ethnicity. [RC]	1	2	3	4
17. I have a clear sense of what my ethnicity means to me.	1	2	3	4

RC = Reverse Coded

APPENDIX G: COLORBLIND IDEOLOGY MEASURE

Questions developed for a dissertation (Rohrbach, 2014), and used by Williams & Banerjee, 2021.

Response options were (1) very strongly disagree, (2) strongly disagree, (3) disagree, (4) agree, (5) strongly agree, (6) very strongly agree.

1. I think it's best to avoid mentioning someone's race or ethnicity when talking about or describing someone. [RC]
2. I try to downplay differences between racial or ethnic groups. [RC]
3. I am afraid if I mention race or ethnicity, people will think I am prejudiced.
4. I like to think that I don't see race or ethnicity. [RC]
5. Every person has a "fair shot" at life, no matter their race or ethnicity. [RC]
6. Racism doesn't exist in our society anymore. [RC]

RC = Reverse Coded

APPENDIX H: FEAR OF DISCUSSING RACE MEASURE

Questions developed for a dissertation (Rohrbach, 2014), and used by Williams & Banerjee, 2021.

Response options were (1) very strongly disagree, (2) strongly disagree, (3) disagree, (4) agree, (5) strongly agree, (6) very strongly agree.

1. I fear that talking about race with my child will draw his or her attention to race unnecessarily. [RC]
2. I fear that talking about race with my child will lead him or her to be racially biased. [RC]
3. I don't know what my child understands about race at his or her age. [RC]
4. I am nervous about talking about race with my child. [RC]
5. I don't know what to say about race that will lead my child to be unbiased. [RC]

RC = Reverse Coded

APPENDIX I: PREJUDICE CONCERNS MEASURE

Questions developed for a dissertation (Rohrbach, 2014), and used by Williams & Banerjee, 2021.

Response options were (1) very strongly disagree, (2) strongly disagree, (3) disagree, (4) agree, (5) strongly agree, (6) very strongly agree.

Concerns that Children Will be Discriminated Against

1. When my child talks to someone of a different race or ethnicity, I worry that he/she might be treated in a prejudiced way.

2. When I see someone of a different race or ethnicity, I worry that they will act prejudiced towards my child.

Concerns that Children will Discriminate Against Others

1. I am worried that my child might think prejudiced thoughts around people of different races or ethnicities.

2. When my child thinks about talking to someone of a different race or ethnicity, I am worried that he/she might have inappropriate thoughts or feelings.

3. When my child thinks about talking to someone of a different race or ethnicity, I am worried that my child might say something that will make him/her look prejudiced.

4. I am concerned that something my child does or says when talking to someone of a different race or ethnicity might be labeled prejudice.

APPENDIX J: DIGITAL-SCREEN EXPOSURE QUESTIONNAIRE (DSEQ) FOR YOUNG CHILDREN

Domain 2: Screen time exposure and home media environment

1. What is the frequency of watching television in a typical week?
2. Duration of watching television on a typical working day?
3. Duration of watching television on a typical holiday?
4. Does the child watch television supervision frequency by an adult?
5. What is the frequency of using smartphone in a typical week?
6. Duration of using smartphone on a typical working day?
7. Duration of using smartphone on a typical holiday?
8. Does the child use smartphone supervision frequency by an adult?
9. What is the frequency of watching laptop/computer in a typical week?
10. Duration of watching laptop/computer on a typical working day?
11. Duration of watching laptop/computer on a typical holiday?
12. Does the child watch laptop/computer supervision frequency by an adult?
13. Do you have any rules regarding when, where, what & how to watch digital screen?
14. Average duration of screen time per day of the caretaker

Domain 3: Level of physical activity

15. Average duration of outside play per day on working/school days
16. Average duration on holidays of outside play per day

Domain 4: Media behaviors of the child

17. The child uses digital media gadgets for completing homework assignments online
18. The child uses video calling applications to talk to the family/friends
19. The child uses digital media gadgets for learning poems, rhymes, alphabets etc.

20. The child uses digital media gadgets to learn math's, numbers, tables

21. The child uses digital media gadgets to recognize shapes/sounds/colors

22. The child uses digital media gadgets to learn various sciences online

23. The child uses digital media gadgets to learn to draw/write

24. The child plays video games on digital media gadgets

25. The child uses digital media gadgets to watch stories

26. The child uses digital media gadgets to watch adult programs (soap opera, news, sports, movies etc.) on media screens online

27. The child uses digital media gadgets to learn letters, words, vocabulary, language online

28. Digital media gadgets to watch random things for enjoyment (music, advertisements, click photos etc.)

CHAPTER 4: INTEGRATED DISCUSSION

Introduction

Inspired by the lifespan model of ethnic-racial identity, two studies were designed to deepen our understanding of the initial phase of the lifespan model: ethnic-racial priming. Ethnic racial priming "...may prompt initial awareness of ethnicity/race that becomes differentiated across childhood and through adulthood" (Williams et al., 2020, p. 120). Study 1 used a scoping review to investigate the current state of the literature on the socio-cognitive capacity of infants and toddlers in connection with ethnicity and race. Study 2 sought to advance measurement options to investigate ways in which caregivers contribute socialization factors by examining their beliefs and practices. Taken together, the two studies serve to test the hypotheses embedded within the Reciprocal Ethnic-Racial Identity Development (RERID) model (see Figure 9). Learnings from both studies are applied to the RERID model resulting in the updated Reciprocal Healthy Ethnic-Racial Identify Development (RHERID) model.

Original REIRD Model

The lifespan model of ethnic-racial identity demonstrates the interconnectedness and overlap of ERI dimensions over time and across developmental periods (Williams et al., 2020). The lifespan model also serves as an invitation for ERI scholars to further operationalize ERI development within each developmental period through advances in measurement and examination of influences. In response, the RERID model was developed from an integrated theoretical framework (e.g., Bronfenbrenner, 1979; García Coll et al., 1996; Piaget et al., 1971; Spencer et al., 1997; Vélez-Agosto et al., 2017, Vygotsky, 1978) to organize ideas on how infants and toddlers begin to develop ERI within the ethnic-racial priming phase of the lifespan model.

Central to the RERID model is the dyadic interaction between child and caregiver. The caregiver is positioned within the model as a socializing agent and the child is positioned as a socialization recipient. The RERID model hypothesizes that the socio-cognitive capacity of infants and toddlers interacts with the socialization factors brought by their caregivers resulting in ERI development outcomes. The RERID model further suggests that the caregiver experiences further ERI development throughout the process; thus, the socializing agent is also a secondary socialization recipient, making the process dynamic and reciprocal. Cultural contexts and individual factors are also represented in the model as components that influence ERI developmental outcomes.

Summary of Study Findings

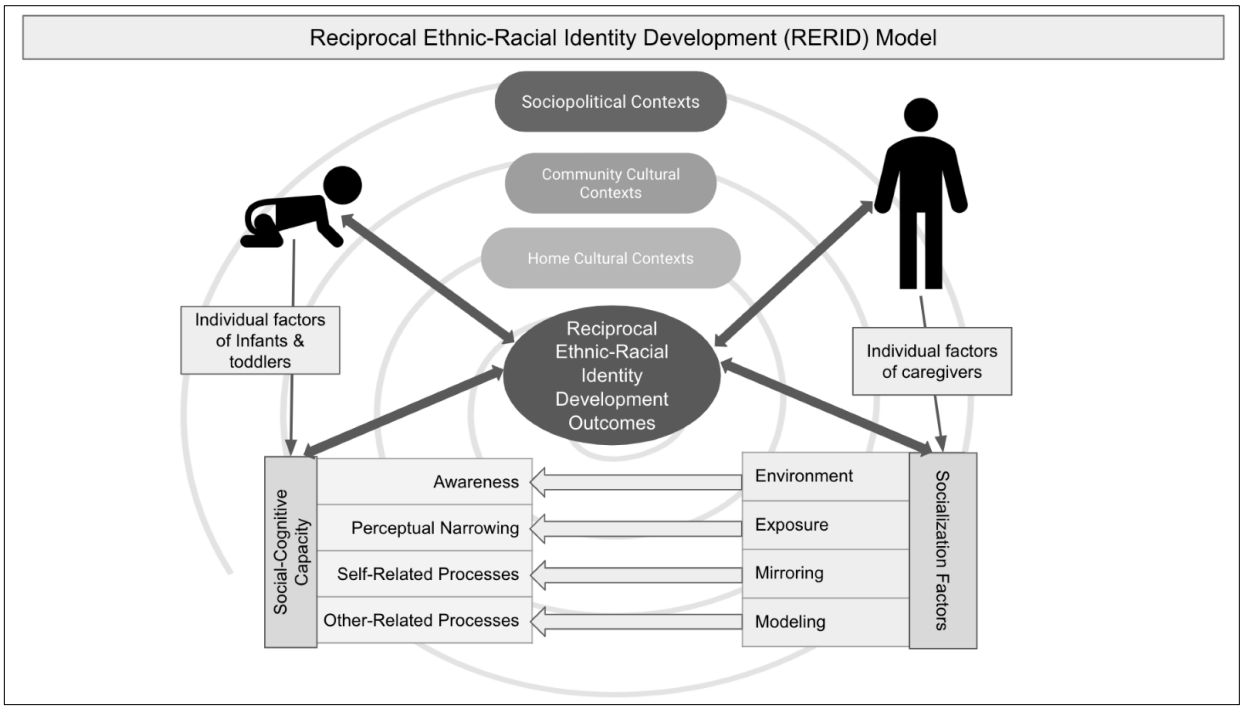
Study 1 Findings

Findings from Study 1 affirmed the saliency of ethnicity and race for infants and toddlers with 92% of studies included in the scoping review (N = 168) demonstrating the ability of infants and toddlers to differentiate others based on phenotypic differences in visual and auditory features (e.g., Bar-Haim et al., 2006; Howard et al., 2015). Study 1 also provided evidence that in-group familiarity (e.g., ethnicity, race, language, culture) emerges during infancy and continues to develop throughout toddlerhood (e.g., Fassbender et al., 2016, Hayden et al., 2007). Natural out-group curiosity among older infants was also evident in Study 1 results (e.g., Katz & Kofkin, 1997; Liu et al., 2015), as was the tendency of infants and toddlers to view out-group members as less reliable sources when it comes to providing information or giving directions (e.g., Buttelmann, 2013; Pickron et al., 2017). Further, the impact of perceptual narrowing was elevated in Study 1 with results showing a decrease in infant ability to differentiate other-race

faces over time in the absence of exposure (e.g., Balas et al., 2011; Kelly et al., 2007; Sugden & Marquis et al., 2017).

Figure 9

The Reciprocal Ethnic-Racial Identity Development Model



While only two of the 168 included studies explored the impact of intentional exposure to other-race faces as an intervention, both demonstrated promising results in disruption of perceptual narrowing effects (Anzures et al., 2012; Heron-Delaney et al., 2011). Conjointly, the findings from Study 1 provide evidence that the first three years of life are a unique period in which intentional ERS may have particularly strong effects on subsequent healthy ERI. Unfortunately, Study 1 also revealed a substantial lack of research about how caregivers engage in ERS with infants and toddlers or how ERS with infants and toddlers might influence variation in children's subsequent behaviors and ERI outcomes.

Study 2 Findings

Study 2 outlined a systemic process of new measure development in response to the research gaps illuminated in Study 1. Items from existing measures were adapted for relevancy to the population, caregivers of infants and toddlers, and novel items were created in alignment with applicable theoretical frameworks. The process resulted in the development of two new measures intended to measure ERI beliefs (Ethnic-Racial Identity Awareness and Learning Scale) and ERS practices (Early Ethnic-Racial Socialization Practices Scale) among caregivers of infants and toddlers. Together, the ERIAL scale and the EERSP scale surveys contain the subcomponents of justice-based ethnic-racial socialization (JBERS), and the scoring of both measures indicates the level of capacity caregivers of infants and toddlers possess to engage in JBERS.

Study 2 used exploratory factor analysis to examine the factorial structure of the two new measures. The consideration of data analysis results, theoretical alignment and factorial structure interpretability were used to identify the final factor solutions for each measure. Evidence of a 3-factor solution was found for the ERIAL scale, and Evidence for a 5-factor solution was found for the EERSP scale (see Table 22).

Table 22

Factorial Structures for ERIAL Scale and EERSP Scale

ERIAL Scale Factors	
1	Personal ERI Awareness
2	Systemic ERI Awareness
3	Accountability to Learning about ERI
EERSP Scale Factors	
1	Color Conscious Exposure
2	Affirmation of Blackness
3	Discussion of Physical Features
4	Cultivation of Empathy
5	Curation of Window and Mirror Environments

Reciprocal Healthy Ethnic-Racial Identity Development Model

The findings from Study 1 clarified the capacities that infants and toddlers bring to the RERID model, and the findings from Study 2 extrapolated what caregivers can bring to RERID model. Findings from both studies were effectuated to revise the RERID model. The revised model includes the distinction of *Healthy ERI* making it the Reciprocal Healthy Ethnic-Racial Identity (RHERID) Model (see Figure 10).

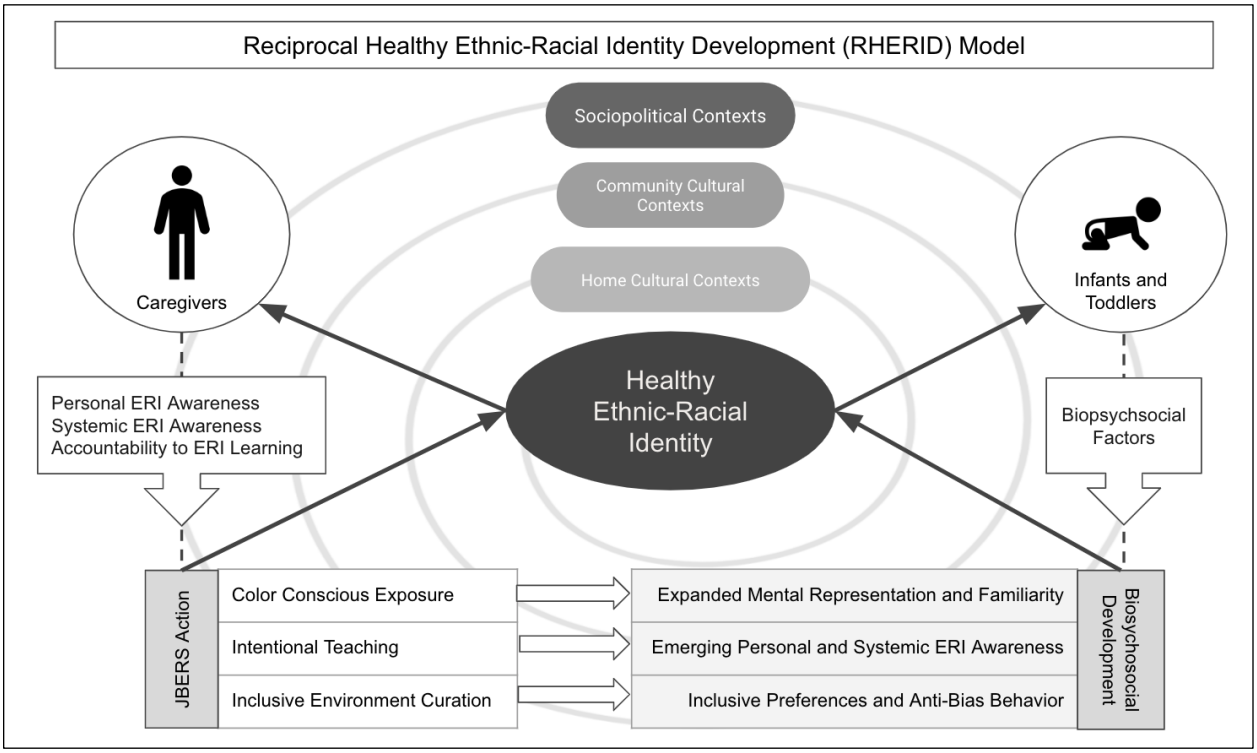
Organization of the Reciprocal Healthy Ethnic-Racial Identity Development (RHERID) Model

In the revised RHERID model, the position of the caregiver image was moved to the left side of the figure and the image of the child was moved to the right side. This orientation shift was made to indicate that the caregiver actions precede the developmental influence on the child. Both the caregiver image and the child image are positioned within circles to indicate the intersectional social identities (i.e. individual factors; Williams et al, 2020) of each individual that interact with the various levels of cultural context. The concept of culture as a micro system (Vélez-Agosto et al., 2017) is represented by the background spiral. The two arrow text boxes indicate what caregivers and children bring to the RHERID process. Caregiver contributions are presented as the three factors of the ERIAL scale measure: Personal ERI Awareness, Systemic ERI Awareness, and Accountability to learning about ERI.

Infant and toddler contributions are presented as the biopsychosocial factors that are innate in typically developing young children (Kranzler et al., 2020). Building from the bioecological systems theory was previously incorporated into the original RERID model (Williams et al., 2020), the biopsychosocial ecological model was also included in the expanded conceptualization of the RHERID model.

Figure 10

Reciprocal Healthy Ethnic-Racial Identity (RHERID) Model



Biopsychosocial factors are inclusive of things like genetics, and physical health (biological), mental health, and cognitive abilities (psychological), socioeconomic status, and life events (social; Kranzler et al., 2020). The biopsychosocial ecological model also encompasses the developmental outcomes described in Study 1: mental representation and familiarity, ERI awareness, inclusive preferences, and anti-bias behavior (Kranzler et al., 2020).

When caregivers demonstrate personal ERI awareness, systemic ERI awareness, and accountability to ERI learning, their beliefs inform their JBERS practices. In the RHERID model, the five factors of the EERSP scale found in Study 2 have been collapsed into three JBERS Actions: color conscious exposure, intentional teaching (Affirmation of Blackness, Discussion of Physical Features, and Cultivation of Empathy), and inclusive environment curation (Curation of Windows and Mirrors Environments). Each of these actions contributes to

the shaping of biopsychosocial development outcomes exemplary of healthy ERI among infants and toddlers.

Finally, there may be a reciprocal nature to JBERS beliefs and practices. It is thought that caregivers who demonstrate JBERS beliefs and engage in JBERS practices may further develop their own healthy ERI as a result. Preliminary evidence for this reciprocal dynamic was suggested in Study 2 when participants were asked the extent to which they agreed with the statement: "Considering how I will teach my toddler about race and ethnicity prompts me to reflect on what I learned in my own childhood". Ninety-two percent of participants (n = 153) selected agree or strongly agree. Such reflective practice may allow caregivers to reassess their own early learning and reconsider their beliefs and build the capacity for more advanced critique that comes with age and new perspectives that come with caregiving roles. There is a reciprocal nature to the child's process as well. As infants and toddlers experience JBERS, their biopsychosocial outcomes can be influenced in ways that promote the development of their healthy ERI and in turn expand their biopsychosocial skill capacity.

Future Directions for Research

Findings from this dissertation provide ample opportunities for future research. Replication of the scoping review in Study 1 could be valuable in the future to include studies published after March 6, 2023. Alternately, now that there is a better sense of the current state of the early ethnic-racial awareness literature, a systematic review may be more appropriate. Replication of Study 2 with a larger sample and the inclusion of additional ethnic-racial groups should also be considered in future research. Such an expansion would serve to further validate the new ERIAL scale and EERSP scale measures and also demonstrate adaptability of the measure across all ethnic-racial groups.

This dissertation makes a significant contribution to the literature but is just a first step. Clarifying the current state of the ERI and ERS literature for children zero to three years (Study 1) and introducing new measures that are designed specifically for use with caregivers of the zero to age three population (Study 2) are valuable. However, future research should build upon the findings of this dissertation to examine associations between JBERS delivery and infant/toddler outcomes among diverse ethnic-racial groups and within varying cultural contexts. Ultimately, understanding the impact of JBERS on infants/toddlers and their caregivers is a goal of this research.

Implications for Policy and Practice

This dissertation offers a number of implications for policy and practice. The current sociopolitical context makes the topic of this research both highly relevant and precariously positioned. The topic of ethnic-racial identify development and socialization in early childhood is highly relevant in the U.S. context given the increasing ethnic-racial diversification of the population (e.g., Frey, 2023; Nishina & Witcow, 2019) and the rise of calls for social justice and equitable practices to be elevated across social systems (Gilliam, 2005; Iruka et al., 2020; Jemal & Bussey, 2022; Kendi, 2019). At the same time, the topic is precariously positioned amidst book ban campaigns (e.g., Goncalves et al., 2024), educational audits (e.g., Chapoco, 2023), and the systemic dismantling of justice advancing policy (e.g., Gupton & O'Sullivan, 2024). Findings from this dissertation can be leveraged in this moment to inform early childhood education curriculum and guide parenting practices for those who desire to engage in the resistance of movements seeking to erase the impacts of systemic oppression and minimize the meaning of ethnic-racial identity (e.g., Hazelbaker et al., 2021; Swanson et al, 2009; Waxman, 2021).

Implications for practice include the use of the JBERS framework and the RHERID model to inform the development of resources to support caregiver development of JBERS capacity. Findings from this dissertation go beyond explaining why JBERS is important and begin to operationalize how capacity to engage in JBERS can be developed. Findings can be organized into educational workshops for parents, early educators, and staff in child serving organizations such as foster care agencies and child welfare programs. The ERIAL scale and EERSP scale specifically can be utilized to assess caregiver capacity to engage in JBERS and results can inform the customization of educational topics that would be most beneficial to individuals and groups wanting to increase their capacity to Engage in JBERS. Utilization of the ERIAL scale and EERSP scale overtime can demonstrate growth and guide continuing education efforts.

Conclusion

In sum, the findings from this dissertation underscore the critical role of early ethnic-racial socialization (ERS) in shaping both individual and collective efforts toward dismantling systemic racism. By exploring the development of ethnic-racial awareness in infants and toddlers and examining caregivers' ERS practices, this research adds depth to the understanding of ERI development during the foundational first three years of life. The introduction of the new ERIAL and EERSP measurement tools provides a significant advancement in assessing caregivers' capacity for engaging in justice-based ethnic-racial socialization (JBERS). These findings have important implications for both theory and practice, particularly in the context of supporting caregivers and early educators in fostering healthy ethnic-racial identities in young children. However, this work also highlights key areas for future research, including the need for more inclusive studies that reflect the diversity of caregivers and children and a closer examination of

the long-term impacts of early ERS practices. Ultimately, the research presented in this dissertation contributes to the ongoing efforts to challenge and disrupt systems of oppression, offering a path forward for more intentional, transformative practices aimed at cultivating equity and justice from the earliest stages of development.

REFERENCES

Anzures, G., Wheeler, A., Quinn, P. C., Pascalis, O., Slater, A. M., Heron-Delaney, M., Tanaka, J. W., & Lee, K. (2012). Brief daily exposures to Asian females reverses perceptual narrowing for Asian faces in Caucasian infants. *Journal of Experimental Child Psychology*, *112*(4), 484–495. https://doi.org/10.1016/j.jecp.2012.04.005

Balas, B., Westerlund, A., Hung, K., & Nelson, C. A., III. (2011). Shape, color and the other-race effect in the infant brain. *Developmental Science*, 14(4), 892–900. https://doi.org/10.1111/j.1467-7687.2011.01039.x

Bar-Haim, Y., Ziv, T., Lamy, D., & Hodes, R. M. (2006). Nature and nurture in own-race face processing. *Psychological Science*, 17(2), 159–163. https://doi.org/10.1111/j.1467-9280.2006.01679.x

Bronfenbrenner, U. (1979). *The ecology of human development*. Harvard University Press.

Buttelmann, D., Zmyj, N., Daum, M., & Carpenter, M. (2013). Selective imitation of in-group Over out-group members in 14-month-old infants. *Child Development*, 84(2), 422–428. https://doi.org/10.1111/j.1467-8624.2012.01860.x

Chapoco, R. (2023, April 25). Gov. Kay Ivey's dismissal of early childhood education secretary brings criticism. *Alabama Reflector*. https://alabamareflector.com/2023/04/25/iveys-dismissal-of-early-childhood-education-secretary-leader-brings-sharp-criticism/

Fassbender, I., Teubert, M., & Lohaus, A. (2016). The development of preferences for own-race versus other-race faces in 3-, 6- and 9-month-old Caucasian infants. *European Journal of Developmental Psychology*, 13(1), 152–165. https://doi.org/10.1080/17405629.2015.1073585

Frey, W., 2023. New 2020 census data shows an aging America and wide racial gaps between generations, Brookings Institution. United States of America. Retrieved from https://coilink.org/20.500.12592/30x9qr on 22 Dec 2024. COI: 20.500.12592/30x9qr.

García Coll, C., Lamberty, G., Jenkins, R., McAdoo, H. P., Crnic, K., Wasik, B. H., & Vázquez García, H. (1996). An integrative model for the study of developmental competencies in minority children. *Child Development*, *67*(5), 1891–1914.

Gilliam, W. (2005). *Prekindergarteners Left Behind: Expulsion Rates in State Prekindergarten Systems.*

Goncalves, M. S. O., Langrock, I., LaViolette, J., & Spoon, K. (2024). Book bans in political context: Evidence from US schools. *PNAS Nexus*, *3*(6), pgae197. https://doi.org/10.1093/pnasnexus/pgae197

Gupton, J. T., & O'Sullivan, A. (2024). Critically framing Florida's anti-Woke education reform movement. *Journal of Educational Administration and History*. https://www.tandfonline.com/doi/abs/10.1080/00220620.2024.2376717

Hayden, A., Bhatt, R. S., Joseph, J. E., & Tanaka, J. W. (2007). The other-race effect in infancy: Evidence using a morphing technique. *Infancy*, 12(1), 95–104. https://doi.org/10.1111/j.1532-7078.2007.tb00235.x

Hazelbaker, T., Brown, C. S., Nenadal, L., & Mistry, R. (2021). Raising white resisters: Studying the development of anti-racist white children and youth. OSF. https://doi.org/10.31234/osf.io/ej9a5

Heron-Delaney, M., Anzures, G., Herbert, J. S., Quinn, P. C., Slater, A. M., Tanaka, J. W., Kang, L., & Pascalis, O. (2011). Perceptual training prevents the emergence of the other race effect during infancy. *PLOS One*, 6(5). https://doi.org/10.1371/journal.pone.0019858

Howard, L. H., Henderson, A. M. E., Carrazza, C., & Woodward, A. L. (2015). Infants' and young children's imitation of linguistic in-group and out-group informants. *Child Development*, 86(1), 259–275. https://doi.org/10.1111/cdev.12299

Iruka, I., Curenton, S., Durden, T., & Escayg, K.A. (2020). *Don't look away: Embracing anti-bias classrooms.* https://www.kaplanco.com/product/33461/dont-look-away-embracing-anti-bias-classrooms?c=16%7CTR1026

Jemal, A., & Bussey, S.R., (2022). Liberatory education: We are the ones we've been waiting for. In M. Sykes, & K. Ostendorf. *Child care justice: Transforming the system of care for young children.* (pp. 20-47) Teachers College Press.

Katz, P. A., & Kofkin, J. A. (1997). Race, gender, and young children. In *Developmental psychopathology*: Perspectives on adjustment, risk, and disorder (619144828; 1997-08446-003; pp. 74, Chapter xxi, 618 Pages). Cambridge University Press, New York, NY.

Kelly, D. J., Liu, S., Ge, L., Quinn, P. C., Slater, A. M., Lee, K., Liu, Q., & Pascalis, O. (2007). Cross-race preferences for same-race faces extend beyond the African versus Caucasian contrast in 3-month-old infants. *Infancy*, 11(1), 87–95. https://doi.org/10.1207/s15327078in1101_4

Kranzler, J. H., Floyd, R. G., Bray, M. A., & Demaray, M. K. (2020). Past, present, and future of research in school psychology: The biopsychosocial ecological model as an overarching framework. *School Psychology*, 35(6), 419–427. https://doi.org/10.1037/spq0000401

Kendi, I. X. (2019). *How to be an antiracist* (First Edition). One World.

Liu, S., Xiao, W. S., Xiao, N. G., Quinn, P. C., Zhang, Y., Chen, H., Ge, L., Pascalis, O., & Lee, K. (2015). Development of visual preference for own- versus other-race faces in infancy. *Developmental Psychology*, *51*(4), 500–511. https://doi.org/10.1037/a0038835

Nishina, A., & Witkow, M. R. (2019). Why developmental researchers should care about biracial, multiracial, and multiethnic youth. *Child Development Perspectives*, 14(1), 21–27. https://doi.org/10.1111/cdep.12350

Piaget, J. (1971). The theory of stages in cognitive development. In D. R. Green, M. P. Ford, & G. B. Flamer, *Measurement and Piaget*. McGraw-Hill.

Pickron, C. B., Fava, E., & Scott, L. S. (2017). Follow my gaze: Face race and sex influence gaze-cued attention in infancy. *Infancy*, 22(5), 626–644. https://doi.org/10.1111/infa.12180

Spencer, M. B., Dupree, D., & Hartmann, T. (1997). A phenomenological variant of ecological systems theory (PVEST): A self-organization perspective in context. *Development and Psychopathology*, *9*(4), 817–833. https://doi.org/10.1017/S0954579497001454

Sugden, N. A., & Marquis, A. R. (2017). Meta-analytic review of the development of face discrimination in infancy: Face race, face gender, infant age, and methodology moderate face discrimination. *Psychological Bulletin*, 143(11), 1201–1244. https://doi.org/10.1037/bul0000116

Swanson, D. P., Cunningham, M., Youngblood, J., & Spencer, M. B. (2009). *Racial identity development during childhood*. 15.

Vélez-Agosto, N. M., Soto-Crespo, J. G., Vizcarrondo-Oppenheimer, M., Vega-Molina, S., & García Coll, C. (2017). Bronfenbrenner's bioecological theory revision: Moving culture from the macro into the micro. *Perspectives on Psychological Science*, *12*(5), 900–910. https://doi.org/10.1177/1745691617704397

Vygotsky, L. S., & Cole, M. (1978). *Mind in society: Development of higher psychological processes*. Harvard University Press.

Waxman, S. R. (2021). Racial awareness and bias begin early: Developmental entry points, challenges, and a call to action. *Perspectives on Psychological Science*, 16(5), 893–902. https://doi.org/10.1177/17456916211026968

Williams, C. D., Byrd, C. M., Quintana, S. M., Anicama, C., Kiang, L., Umaña-Taylor, A. J., Calzada, E. J., Pabón Gautier, M., Ejesi, K., Tuitt, N. R., Martinez-Fuentes, S., White, L., Marks, A., Rogers, L. O., & Whitesell, N. (2020). A lifespan model of ethnic-racial identity. *Research in Human Development,* 17(2–3), 99–129. https://doi.org/10.1080/15427609.2020.1831882