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Improving how children's socioeconomic disadvantage is studied: A holistic and contextual approach

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Abstract

Developmental science has long explored how socio-economic circumstances shape child outcomes. While recent calls emphasize the need for more sensitive, holistic operationalizations of disadvantage, a gap remains in balancing mechanistic precision with policy relevance. This paper identifies three strategies to foster a comprehensive and inclusive understanding of how socio-economic contexts influence development. First, measurement must be ecologically grounded and meaningful to the specific population under study. Second, researchers should account for multiple developmental pathways. Finally, we must capture heterogeneity in family circumstances, highlighting both hidden costs and inherent strengths. By integrating these perspectives, the field can achieve more precise, context-sensitive insights into the diverse realities of socio-economic disadvantage.

Keywords socioeconomic status, socioeconomic disadvantage, families, cognitive development, social inequality

Introduction

Worldwide, about 4 in 10 children experience multidimensional poverty and lack basic necessities (Global Coalition to End Child Poverty, 2025). In high-income countries, rates of poverty among families with children under 5 are increasing (Rees et al., 2023), along with inequalities in children's cognitive and educational outcomes (Black et al., 2023). Extensive research in education, sociology, economics, health, and psychology has documented the impact of socioeconomic disadvantage¹ on children's outcomes (e.g., Bradley & Corwyn, 2002; Doyle et al., 2009; Duncan et al., 2012; Evans, 2004; Kiernan & Huerta, 2008; Melhuish & Gardiner, 2024).²

In this article, we advocate for a more nuanced and holistic approach to studying the impact of socioeconomic disadvantage on children's development. We highlight how going beyond static, simple measures of socioeconomic status and adopting methods that are sensitive to context and multifaceted help capture heterogeneity and hidden strengths. Developing a context-sensitive and precise understanding of how socioeconomic disadvantage affects children's development is important and timely given the worldwide increases in poverty and social inequality (Joseph Rowntree Foundation, 2023; Social Mobility Commission, 2023; World Bank, 2022).

In developmental psychology, some researchers have argued that socioeconomic disadvantage may affect the development of core cognitive skills like executive function and language (see Merz et al., 2019), with differences in these skills contributing to attainment gaps in academic skills (James-Brabham et al., 2023; Lawson et al., 2018; Rakesh et al., 2024). Understanding the mechanisms that drive inequitable outcomes early in development is especially important since the first 5 years of life are a sensitive time when interventions at societal, community, and individual levels may mitigate the impact of socioeconomic inequality on

¹ We use the term *socioeconomic disadvantage* to refer to socioeconomic circumstances in which families are more likely to feel material, environmental, economic, or psychosocial stressors. We use the word *disadvantage* to refer to how these circumstances, along with structural barriers and policies, can work against families to create conditions that adversely affect children's outcomes (Antonoplis, 2022).

² For the sociodemographic characteristics of the studies reviewed herein, please see Table S1.

outcomes (Britto et al., 2017; Cattan et al., 2024; Magnuson & Duncan, 2016; Raver et al., 2013). Indeed, insights from developmental science have played a fundamental role in informing and sustaining government initiatives to support children experiencing socioeconomic disadvantage (e.g., see Bertram et al., 2016, for a global review of early childhood programs).

More recently, developmental scientists have turned their attention to two important considerations: (a) the need to conduct research on children's socioeconomic circumstances in context-sensitive and morally responsible ways that avoid perpetuating overly simplistic deficit narratives about children and their families (DeJoseph et al., 2024; Major & Briant, 2023; Miller-Cotto et al., 2022) and (b) the need for greater consensus in how different aspects of socioeconomic disadvantage are conceptualized and measured (Antonoplis, 2022; Pollack & Wolfe, 2020; Zaneva et al., 2024). These conversations have sparked valuable discussions, yet the field still needs to understand how these approaches can be brought together. Specifically, researchers need examine how to operationalize and measure socioeconomic disadvantage and its impacts in ways that are context sensitive while also allowing insights for theory and policy.

Researchers in sociology and policy have argued convincingly that poverty is a societal problem that is sustained by policy choices (Desmond & Western, 2018; Koutavas et al., 2024; Sawo, 2022). While we await and advocate for larger systemic change to ameliorate poverty altogether, we can build a robust science to help motivate and inform comprehensive strategies for supporting children and families in these circumstances. As developmental scientists in this field who are from diverse socioeconomic circumstances, we focus this article on three possible solutions to move developmental science forward (see Figure 1). In setting forth these solutions, we do not suggest that all researchers in developmental science have failed to be reflective or intentional in how they study socioeconomic disadvantage. Indeed, we draw on several excellent examples to illustrate how small changes in how research is designed and communicated can help tell a more complete story.

Over time and as a result of implicit practices, collective narratives of how socioeconomic disadvantage affects outcomes may

be considered incomplete. Our proposed solutions offer a more nuanced, multifaceted approach to studying disadvantage. This approach allows for more carefully defined, testable models that can inform more precise and impactful policy efforts to support families experiencing poverty without perpetuating stigmatizing narratives. We align the solutions with the goals many researchers share—to tell a nuanced and complete story of how socioeconomic disadvantage shapes development.

Recognizing the dynamic nature of socioeconomic disadvantage

Socioeconomic circumstances are dynamic. They can demonstrate different degrees of stability and instability across development (Hernandez et al., 2023; Li & Belsky, 2022), and these shifts in families' socioeconomic circumstances predict changes in childhood outcomes (Li et al., 2018; Wickham et al., 2017). Measures themselves can vary over time in the extent to which they meaningfully predict life outcomes (Long & Renbarger, 2023) or in how they relate to race or ethnicity and resulting structural racism over time (Brady, 2023). In other words, while the construct of socioeconomic disadvantage reflects enduring structural inequalities, what our socioeconomic measures capture—and how well they serve as proxies for underlying material and social constraints—is historically contingent. Relatedly, the impact of experiencing socioeconomic disadvantage can vary with changes in social policies (Carneiro et al., 2024; Cattan et al., 2024; Koutavas et al., 2024). For instance, the benefit cap introduced by the Conservative government in the United Kingdom in 2013 to cap means-tested benefits to two children entrenched socioeconomic disadvantage for many families (Motiani et al., 2024).

The dynamic nature of socioeconomic disadvantage is often underpinned by contexts that drive when, how, and for whom shifts in socioeconomic circumstances occur. These contextual factors can be overlooked when researchers rely on single, static measures of socioeconomic disadvantage. Indeed, social inequality affects children's outcomes differently across countries (e.g., Avvisati, 2020; Howard et al., 2020). Even *within* countries,

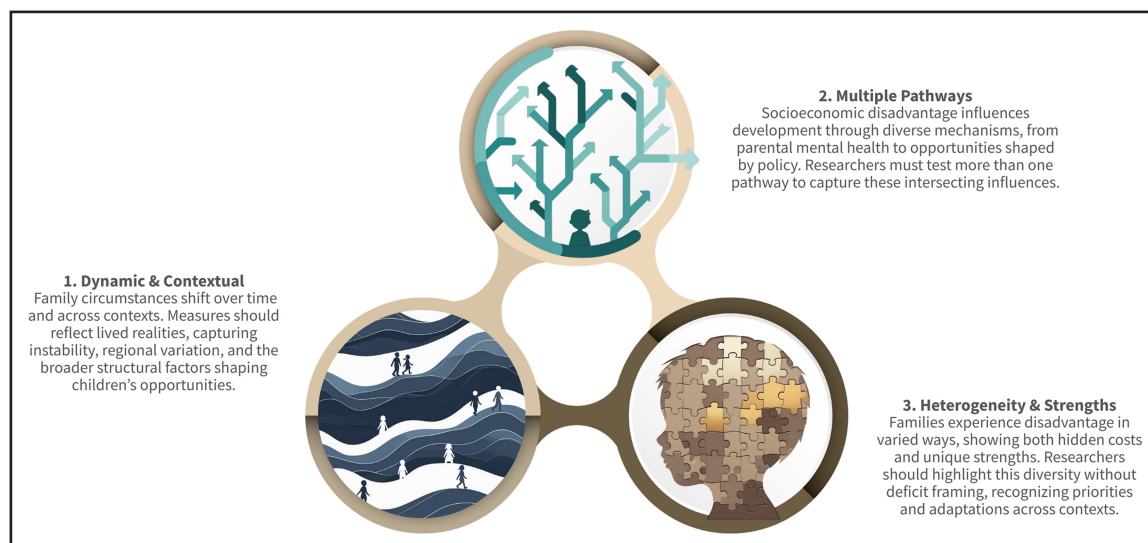


Figure 1 Three guiding principles for a holistic and contextual approach to studying socioeconomic disadvantage.

outcomes can vary as a result of regional differences in context, policies, or how systems of oppression interact with socioeconomic disadvantage.

For example, many families from ethnic minorities face disadvantage due to structural racism that perpetuates poverty over generations (McDougall, 2021). In the United States, racially minoritized children are more than twice as likely to grow up in poverty as are White children (Brady, 2023). In addition, evidence suggests that experiences of racism and discrimination compound socioeconomic disadvantage, with the extent varying regionally due to differences in social policies (Bowen et al., 2021).

Regional differences centered around industry might also affect how socioeconomic disadvantage can cause differences in children's outcomes. For example, families in rural farming communities may have sufficient income at some but not all times. As a result, the negative impacts of economic precarity (e.g., parents' stress) can persist even in times of prosperity (Rudolph et al., 2025). Communities centered around declining industries (e.g., mining) may face limited work opportunities and subsequent loss of social capital (Waddington, 1999), making education a poor predictor of access to opportunity and cultural capital. In popular tourist areas, families may appear to be surrounded by opportunity yet face housing insecurity as a result of elevated housing costs (Willett, 2023).

Whether these socioeconomic factors disadvantage a child might depend on what the optimum outcome looks like for the child and their family (e.g., diversity of career opportunities vs. training in a job for life), or what supportive family and policy mechanisms are in place. For instance, we know that the impact of socioeconomic circumstances on children's neural development is moderated by whether children live in an area with poverty-reduction policies (Weissman et al., 2023).

We refer to the dynamic nature of socioeconomic circumstances not to insist that studies capture changing circumstances over a long period of time or across regions, which in many cases is unfeasible. Instead, we do so to emphasize that the socioeconomic measures used are meaningful within the social context of the population being studied. We welcome calls to take a more ecological approach to understanding childhood socioeconomic circumstances, which requires attention to the broader structural factors that shape family lives in the population being studied (Hyde et al., 2020).

One tangible way to move forward is by measuring theoretically relevant and precise indicators that capture families' current conditions and experiences as they relate to socioeconomic disadvantage, along with broader metrics such as parents' education and family income (see Figure 5 in Antonoplis, 2022, for a guide to building these models). Researchers may also go beyond simply controlling for race or ethnicity to consider more directly what mechanisms are most relevant in predicting outcomes for the specific population being studied (see Fairley et al., 2014, for an example).

We propose that the precise indicators should be conceptually linked to the outcome of interest and be factors pertinent to the studied population, considering the specific ecological context. These indicators can include factors such as parental availability, financial strain, housing security, parents' mental and physical health, and access to high-quality early childhood education and care. Where large longitudinal data sets are available, researchers can examine these indicators over time to capture changes in

family circumstances. Social scientists who use this approach with existing data sets have contributed to our understanding of how socioeconomic disadvantage influences childhood outcomes (e.g., Chetty & Hendren, 2018; von Stumm et al., 2022).

Recognizing the many ways socioeconomic disadvantage exerts its impact can lead to better models

Many current theories that aim to understand the impact of disadvantage on children's outcomes tend to focus on one mechanism, such as stress or parental investment (Nomaguchi & Milkie, 2017). However, broad-level indicators of disadvantage can influence development through distinct causal pathways (Duncan & Magnuson, 2012). For example, financial strain may limit parents' interactions with their children (e.g., Ellwood-Lowe et al., 2022), while parents' educational level may shape children's approach to learning and education (e.g., Klimes-Dougan et al., 1992). Similarly, social policies designed to mitigate the impact of disadvantage may operate through multiple mechanisms, underscoring the importance of identifying these pathways through research.

As another example, children of parents with low levels of formal education might benefit from high-quality early child care because they gain access to a learning environment that is closer to the one they will experience when they start school (i.e., they become socialized into school readiness; Berry et al., 2016; Del Boca et al., 2017). In contrast, children of parents who work long hours for low pay might benefit from free high-quality early child care because it alleviates some stress for their parents, enabling them to provide more responsive, attuned parenting at home (Berry et al., 2016; Gelber & Isen, 2013).

Given likely heterogeneity in pathways that link socioeconomic disadvantage to children's outcomes, we encourage study designs that consider multiple proximal³ measures that enable researchers to distinguish clear mechanistic pathways. Several developmental studies have examined multiple proximal measures that show meaningful variation among families (beyond classic broad-level indicators) and predict different outcomes (e.g., DeJoseph et al., 2021; Hurwich-Reiss et al., 2019; Masten, 2021; Melhuish & Gardiner, 2024). For example, in one study, researchers considered how multiple pathways (a child's emotional home environment, educational home environment, and material deprivation) shaped different outcomes (Cattan et al., 2024). Each pathway was measured using proximal indicators. Researchers found distinct patterns between each pathway and children's cognitive and socioemotional outcomes, helping them identify mechanisms driving differences in outcomes.

Being more explicit about proposed causal pathways and remaining open to testing alternate explanations can help researchers identify these complex, intersecting influences. We suggest that along with including broader indicators of socioeconomic circumstances (e.g., the big three: parental education, parental occupation, and family income), researchers should (a) test more than one relevant theoretical pathway and base the

³ We use the word *proximal* to refer to indicators that capture children's and families' typical exposures, constraints, and opportunities, factors that operate closer to children's daily experience and are more directly implicated than distal socioeconomic proxies in shaping specific developmental outcomes (Bronfenbrenner & Morris, 2006).

pathways on the proximal indicator(s) most likely to link to the proposed mechanism(s) (Antonoplis, 2022); (b) use measurement strategies that are sufficiently consistent and comprehensive to allow pathways to be compared and accumulated across studies, thereby supporting a cohesive cumulative science (see Pollack & Wolfe, 2020); and (c) adopt mixed methods to add nuance to pathway models and identify mechanisms that may not be captured by quantitative indicators.

Capturing heterogeneity: family strengths and hidden costs

In studies of socioeconomic disadvantage, most researchers have focused on where disparities are seen and why. This focus has driven positive change by helping make a clear policy case for further support for children and families. However, it has also meant that many studies have tended to frame children experiencing socioeconomic disadvantage as a homogeneous group at risk of poor outcomes (Taylor et al., 2023). Until recently, the field has focused much less on potential strengths in children or families living in low socioeconomic circumstances. We urgently need this balanced view to identify areas where families need greater support as well as strengths that can be bolstered.

The shortcomings of defining a single aspect of socioeconomic circumstance as a risk factor are compounded by a tendency to focus on a narrow set of mediators or outcomes, such as parents' learning activities or children's school readiness. Parents' priorities for their children and broader family may differ significantly from the outcomes typically measured in developmental studies, either by choice or as a result of rational and resourceful decision making that optimizes for families' existing circumstances (Ellwood-Lowe et al., 2025). We welcome calls for the development of psychometrically sound ways to capture family approaches or developmental outcomes in domains relevant to families from diverse backgrounds rather than focusing solely on outcomes that align with middle-class, productivity-oriented priorities (DeJoseph et al., 2024). Ideally, researchers should use outcome measures that reflect broader foundations of learning and development, and diverse definitions of success (e.g., McCoy & Sabol, 2024). This will enable the field to build a developmental science that is not only more accurate but also more equitable and responsive to the realities of the families we ultimately aim to serve.

Achieving this vision requires thoughtful study design that can capture both areas of challenge, as well as potential strengths or protective factors within diverse family contexts. For example, living in a busy, crowded environment may be an indicator of inadequate space and a cause of stress, but environments that feature intergenerational living may offer advantages such as emotional support, cultural traditions, and cognitive stimulation for children (see DeJoseph et al., 2024; Roskam et al., 2021). This example illustrates how the same contextual factor can have both risks and protective elements depending on how it is experienced and embedded within family and cultural systems. In one study, researchers took a precise approach to examining a measured context such as crowded households (Poudel et al., 2024). While household density on the whole correlated negatively with childhood language, when this density reflected a higher adult-to-child ratio (e.g., via intergenerational living), it was associated positively with children's language development.

To embed the idea of variation across families, focus on differences rather than deficits, and avoid the notion that outcomes are predetermined, researchers need to adopt careful approaches and framing in the ways they communicate their work. Policymakers and the media have misinterpreted and misused studies on social gradients in childhood outcomes, resulting in stigmatizing parents (e.g., Dermott & Pomati, 2016; Gillies et al., 2017; Sullivan et al., 2013). Therefore, researchers should take care to develop rhetoric that removes stigma and supports families in fostering their children's development. In addition to avoiding causal language when reporting on correlational research, we propose avoiding value-laden phrases when describing outcomes. For example, using words such as *lower* or *higher* to report on a child's abilities may be more accurate and neutral than labeling an outcome as worse, especially since the latter is often defined relative to children from more socioeconomically advantaged backgrounds.

We also recommend using humanizing and person-centered language such as *families living with low income* rather than *poor families* (see guidance from Bauer et al., 2025). More broadly, we encourage the use of the term *socioeconomic circumstances* to reflect the fluid nature of families' situations and convey neutrality regarding the status they or others perceive. When studying outcomes that may link back to parenting, researchers should also consider how much control parents realistically have over a given domain linking to an outcome (e.g., stress) and recognize the broader oppressive structural systems that may be constraining families' choices and opportunities.

A long-term goal for developmental science is to develop more nuanced measures that capture variation across families and reflect circumstances in ways that are meaningful and relevant to their experiences. Many existing measures fail to account for the varied ways families strategically adapt or actively work to enact change in a difficult system (see DeJoseph et al., 2021; Siraj-Blatchford, 2010). Coproduction approaches⁴ offer a useful way to include families' and educators' perspectives to ensure that the measures researchers use are meaningful across a range of socioeconomic contexts. This approach has given parents a voice in how early years interventions should be developed (Hart et al., 2024) and included educators in designing play-based early years programs to reduce disparities in learning outcomes (O'Connor et al., 2025). Adopting coproduction approaches will undoubtedly be facilitated by investing time in our communities to build trust and allow for the genuine exchange of knowledge (see Randolph et al., 2022 and Salter et al., 2021, for examples).

Challenges in adopting a more holistic perspective

By including precise indicators, considering multiple causal pathways to inequalities in outcomes, and attending to often-overlooked sources of strength, researchers can develop a more accurate and inclusive understanding of the factors that both constrain and support development in the context of socioeconomic disadvantage. However, moving toward this more holistic way of measuring

⁴ We use the word *coproduction* to refer to approaches that partner with families or community stakeholders to help define constructs of interest, inform item development, and interpret measures in ways that reflect individuals' and families' experiences and local contexts (for an illustrative example, see Rowe et al., 2012).

disadvantage will be complex and challenging. Developmental scientists often face constraints, including limited funding, resources, and time. Social science research offers many lessons; here, work harmonizing data sets has uncovered multiple pathways through which socioeconomic disadvantage can influence children's outcomes (Cattan et al., 2024) and researchers are acutely aware of how broader structural constraints shape individuals. However, the work that psychologists do often does involve detailed mechanistic work (e.g., observing and coding parent-child interactions) that cannot as easily be gathered using big data methods.

Furthermore, even those with the resources to work with large samples often encounter constraints regarding what can be gleaned from a sample (e.g., ensuring that parents are not

overburdened, recognizing that families may be reluctant to provide information about their income), leading data to be systematically missing from families that are already underrepresented in research. It may be helpful for researchers to explain to participants that they want to ensure that their samples are representative of the population in the community and to offer an ethical reimbursement of their time. In circumstances where these data cannot be collected or is not available, developmental scientists should be clear that single or big three indicators are broad and proxy measures for complex mechanisms. To facilitate this, we have listed reflective questions for researchers to consider as they design, implement, and disseminate their research in this area (see Table 1).

Table 1 Recommended reflective questions for research on socioeconomic disadvantage.

Research stage	Questions
Design	In deciding how to operationalize socioeconomic circumstances... - Are there any proximal variables along with income and education that you can include? What variables—related to common indicators of socioeconomic status—are likely to be driving differences in your outcome variable and be particularly pertinent to the population you are working with (considering the ecological context)? - Might there be more than one plausible pathway through which socioeconomic circumstances affect your outcome variable? - What additional variables might interact with your measures of socioeconomic circumstances to influence the effect on your outcome variable (e.g., demographic variables like ethnicity or parents' age) or additional variables that might uncover strengths for some groups (e.g., opportunities for physical play, not just formal learning)? - Are there contextual or structural factors you can measure that will give you richer insight into potential differences? Are these best captured qualitatively, quantitatively, or using mixed methods? - Is there access to qualitative data that can help contextualize findings? For longitudinal research: - Are there repeated measures of socioeconomic disadvantage that can be leveraged to assess dynamic changes in socioeconomic circumstances over time? Which variables are likely to show changes in your sample? When would change be most likely to occur? In deciding how to operationalize outcome variables... - Is there any potential bias that might creep into the measure as a result of children finding task materials not meaningful, engaging, or too far outside of their day-to-day experience? - Is there a way to "level the playing field" by adjusting the assessments (e.g., not using treats to index self-regulation for children experiencing poverty)? - Are there opportunities, through collaborations with parents or stakeholders, to understand what outcomes families want for their children and what they prioritize?
Implementation	Including proximal variables brings with it the possibility of collecting personal and sensitive data. Therefore, researchers should consider implementing safeguards to protect families. - If accurate, can you reassure participants you are looking only at group-level data and not at individuals? - What safeguards can be put in place to protect families that disclose sensitive information? - What are the best sources of support to signpost participants to, if needed? - If working with families, can you allow time to ease families into the protocol, making toys available for the children to warm up? Can you provide time and travel reimbursements in ways that would be meaningful and easy for families to use? If working with children at school or preschool, can you provide time and space to meet parents to introduce yourself and answer questions in person in order to build trust?
Dissemination	- Have you used person-centered language in any outputs (e.g., <i>families living with low income</i>)? - Have you avoided terms that are judgmental and value-laden (e.g., <i>worse skills</i>)? - Have you acknowledged any wider structural constraint that might be at play in any outputs? - Does your narrative in the introduction and discussion sections adequately acknowledge the complex realities of the families represented in these data, and does it center families' dignity and agency? - Does your conclusion consider how well findings would generalize to other contexts? - If distal proxies for socioeconomic disadvantage have been used, is this acknowledged?

Finally, researchers' work must recognize the importance of context and culture, and how inequalities are magnified as a result of interactions with oppressive and racist systems. We have much more work to do to understand the role of socioeconomic circumstances and their links to outcomes in diverse global contexts, and challenges remain in how to do this research ethically amid funding constraints and varied sociopolitical priorities. Researchers should exercise humility in drawing conclusions about how broadly their findings generalize to other communities and regions (see Keller et al., 2018, for an example), especially when findings inform interventions directed at parents, where misinterpretation can have harmful consequences (Scheidecker et al., 2023).

Conclusion

To build a developmental science that reflects the realities of all children, we must move beyond static, narrow indicators of socioeconomic status toward a more dynamic, context-sensitive understanding of family circumstances. This requires a shift in how researchers design studies, interpret findings, and communicate results, one that embraces complexity without losing clarity. Developmental science must attend to not only the mechanisms through which disadvantage shapes development but also the adaptive strategies, values, and priorities of families navigating structural constraints. Developing stronger, coproduced measures and adopting language that empowers rather than stigmatizes families will help ensure that this work reflects rather than distorts the experiences of the communities in which studies are conducted. This is not only a theoretical imperative but a practical one since research has shown that inclusive, strength-oriented frameworks are essential for building effective policies and services (Bouchal & Norris, 2014; Laing & Todd, 2020; Silverman et al., 2023). Ultimately, developmental science has the opportunity and responsibility to support more just and inclusive policies by developing more meaningful and context-sensitive measures and keeping equity at the center of our work.

Supplementary material

Supplementary material is available at *Child Development Perspectives* online.

Author contributions

Emma Blakey (Conceptualization, Investigation, Methodology, Project administration, Writing—original draft [lead], Writing—review & editing [equal]), Alexandra Hendry (Conceptualization, Investigation [equal], Writing—original draft, Writing—review & editing [supporting]), Laura A. Outhwaite (Conceptualization [equal], Investigation, Writing—original draft, Writing—review & editing [supporting]), Eleanor K. Braithwaite (Conceptualization [equal], Investigation, Writing—original draft, Writing—review & editing [supporting]), Gabriel Reyes (Investigation, Writing—original draft, Writing—review & editing [supporting]), Ivan A. Hernandez (Investigation, Writing—original draft, Writing—review & editing [supporting]), Monica E. Ellwood-Lowe (Investigation, Writing—original draft, Writing—review & editing [supporting]), and Meriah L. DeJoseph (Investigation, Writing—original draft [supporting], Visualization [lead], Writing—review & editing [equal])

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Conflicts of interest

None declared.

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