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THE EFFECTS OF THE 2021 CHILD TAX CREDIT ON PARENTS' PSYCHOLOGICAL WELL-BEING

Lisa A. Gennetian
Anna Gassman-Pines

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ABSTRACT

Although improving psychological well-being was not the explicit focus of the 2021 expanded Child Tax Credit (CTC), psychological health outcomes may have been affected by the positive income shocks generated by the credit. In this chapter we ask: How did the 2021 expanded CTC affect parents' psychological well-being? Some studies have found that the CTC led to reductions in parental reports of clinical levels of depression and anxiety and in subclinical depressive and anxiety symptoms. Using similar methods, other studies have found no effect on these same outcomes. Importantly, however, the evidence does not point to the CTC worsening psychological well-being. We conclude that the evidence so far is thin, narrow, and mixed, even when our review is expanded to comparable studies on the impact of income support. Alignment of policy objectives with a broader range of measurement approaches will be important in building a more conclusive evidence base.

Lisa A. Gennetian
Sanford School of Public Policy
Duke University
212 Rubenstein Hall
302 Towerview Road
Durham, NC 27708
and NBER
lisa.gennetian@duke.edu

Anna Gassman-Pines
Sanford School of Public Policy
Duke University
Box 90245
Durham, NC 27708
agassman.pines@duke.edu

Tax credits are a long-standing public policy strategy to incentivize certain behaviors (such as employment or homeownership). Tax credits have also been used to provide a base level of income to people with very low income, typically as a refundable credit, and thus can have widespread effects on people's economic well-being. The Earned Income Tax Credit (EITC) and related tax credits are shown to meaningfully increase income and have by far the largest anti-poverty effect compared with other anti-poverty programs among families with children (Hoynes 2019; Jones and Zilliak 2022; National Academies of Sciences, Engineering, and Medicine 2019). Yet, the impact of tax credits on the psychological well-being of recipients in general, and of parents in particular, is not well understood, with two exceptions. Boyd-Swan et al. (2016) find decreased depressive symptomology, increased happiness, and improved self-esteem specifically among married mothers in response to the 1990s EITC expansions. Comparing mothers with one child to those with two or more, Evans and Garthwaite (2014) find that the EITC decreased the number of days that mothers reported bad mental health. In longer qualitative interviews, recipients of the EITC describe feelings of relief and hope at the time of the tax credit windfall (Halpern-Meekin et al. 2015) and associate receipt of the tax credit with social inclusion (Sykes et al. 2015). Whether these aspects of psychological well-being have ripple effects in other aspects of family life or economic well-being, or whether such aspects of psychological well-being are enduring or sustained, are open questions. Further, in evaluating the specific case of the 2021 expanded Child Tax Credit (CTC), it is not clear whether the more generous credit available to all parents and provided monthly will or could have similar impacts.

Income and economic well-being are intricately linked to emotional and social states of stress and health, and, for parents, are entangled with the additional physical and emotional demands of raising children. Nevertheless, anti-poverty and related income support policies in the U.S. do not have an explicit focus on improving psychological well-being as a policy goal. Policies designed to increase net income of households typically presume that the pressures and risks of having very low income, from hunger to homelessness, will be alleviated once families have more economic resources. The typical ways to meet these policy objectives in the U.S. are in-kind and means-based programs to address basic needs, such as food (e.g., Supplemental Nutrition Assistance Program), housing, and medical care (e.g., Medicaid and Medicare; Moffitt 2016). From a policy perspective, increasing income is rarely conceived as a strategy to improve overall social welfare or psychological well-being (though policy makers may implicitly presume that these metrics of societal well-being are being optimized).

The COVID-19 pandemic sparked a number of unprecedented U.S. policy investments, including disbursing cash, unconditionally, to many families with children, including those who had not previously been eligible to receive child-based tax credits. Although psychological well-being was not the explicit focus of the expanded CTC, psychological health may have been affected by the resulting income boosts and in potentially unique ways given the broader context of families navigating a public health as well as economic crisis. In this chapter we ask: How did the 2021 expanded CTC affect the psychological well-being of parents?

We begin by offering unique considerations and challenges for examining psychological well-being in the context of low income and parenting. This is followed by a review of stress, mental

health, and subjective well-being (henceforth labeled psychological well-being) to define and situate the broad scope of outcomes, drawing primarily from psychology. Next we summarize findings on the impacts of the expanded 2021 CTC from empirical studies and compare these with related studies on the impacts of direct income support and unconditional cash from a comparable time period. We then offer a framework for moving forward, discuss research conundrums, and examine the complexities of identifying causal relationships between positive income shocks and psychological well-being, especially for families at the low end of the income distribution. We end with a discussion of implications.

Psychological well-being and the context of low income and parenting

Income, and income poverty, represent a complex web of circumstances and internal states that are permanent and chronic but also intermittent and momentary. Psychological well-being is also context and time independent in ways that can co-vary and/or accompany economic status and parenting. Further, there is substantial underlying variation in income level and income stability, and volatility associated with parenting, that do not clearly map onto variations in emotional states, mental health, stress, or subjective well-being. These characteristics may generate seeming contradictions in the examination of positive income shocks through a tax system avenue, such as when increased income leads to increased parenting stress as parents have to adjust to the demands of deciding how best to use their new resources to support their children.

First, it is both possible to be income poor and have many basic needs met (such as housing and food) and also possible to be on the margins of income poverty with compounding financial hardships and little economic cushion, and thus to be one crisis away from the real and emotional aspects of the financial stress of poverty. Those who are income poor, like all people, experience and react to stress as an emotional or systematic response, and this intersects with person-specific qualities and history. Unlike quantifiable metrics of financial or material stress, such as bill payments, homelessness, or hunger, states of emotional well-being can be elusive or fluid and sensitive to momentary circumstances and contexts and/or adaptive to chronic or prior experiences. As we describe below, it is easy to miss the mark in resulting theorizing and measurement of the nuanced ways in which natural variation (or lack thereof) in emotional states, mental health, stress, and subjective well-being may respond to changes in income, including positive income shocks as generated through the 2021 expanded CTC.

Second, the variation (or volatility) and uncertainty of income and parenting interacts with and can have feedback effects related to the design and conditions of income disbursement and the effectiveness of income in addressing sources of financial stress (Gassman-Pines and Gennetian 2020; Hill et al. 2013). The tax system may be a trusted and streamlined source for many parents with earnings, yet also unfamiliar (or even threatening) for other parents who have low or informal earnings and who may not have engaged with the tax system. Access and ease of receiving the expanded CTC, and uncertainty about whether it would be received and the amount expected to be received, can have co-occurring influences on psychological well-being in reinforcing ways (e.g., euphoria and joy on receiving a payment, even more so if it is a surprise payment) and contradicting ways (e.g., hassles in steps to apply or being informed but unsure of how to access the payment, and anxiety associated with the uncertainty). The demands of

parenting and caregiving can be as heterogeneous and variable. Acknowledging the higher cost of raising children related to age and number, the 2021 expansion indeed granted higher tax credits to families with younger and more children. However, age and number of children do not necessarily correspond or translate to levels of parenting stress or drain, which can be invariant to child age or total number of children (Deater-Deckard 2008). A single older child could impose as much or more parenting stress (which can spill over to financial stress) as multiple younger children. Closely spaced births can be more demanding than those spaced further apart. A child with specific developmental needs may require more physical and emotional parenting effort than a typically developing child (Morris and Smith 2022).

The multiple dimensions of psychological well-being

Though often labeled and treated under a general umbrella of "mental health" or "stress," psychological well-being can mean many things and be measured in different ways. Stress, mental health, and subjective well-being are interrelated concepts related to individuals' mood and emotions. And, in turn, policy and public conversations often refer to these aspects of well-being (among others) interchangeably, including when considering the effects of social policies like the CTC or other tax credits on individual well-being. It has long been recognized that psychological health is an important component of overall health (Pressman and Cohen 2005) and is a strong predictor of physical health outcomes, including cardiovascular disease and many others (Nabi et al. 2008; Ohrnberger, Fichera, and Sutton 2017). But understanding how to define and measure these distinct but related components of psychological health is not always straightforward. Nevertheless, these distinctions can matter in important ways, such as when experiences of stress spur focus and drive and when they become overwhelming (McEwen 2005; McEwen and Akil 2020), or when people are in need of clinical intervention to treat diagnosed illness.

Mental health broadly relates to emotional, psychological, and social well-being. People can feel negative emotions and positive emotions every day. At any given moment, people can experience positive emotions such as joy, happiness, satisfaction, or hope. But people can also experience negative emotions like sadness, anger, irritability, or worry. Relatedly, **subjective well-being** refers broadly to how people evaluate their lives in general and particular aspects of their lives, in particular. Subjective well-being can range from in-the-moment feelings to broad, overall evaluations of life goals and purpose.

Mental health problems (sometimes called mental illness) occur when mood, thoughts, or behaviors become dysregulated or overwhelming, and impede individuals' ability to go about their daily lives. Among the most common forms of serious mental health problems are depression and anxiety. Although everyone feels some sadness or worry from time to time, when those feelings consistently last over several weeks or months and are severe enough to affect daily lives, they are considered mental health illnesses or disorders. Because mental health problems are costly both for individuals and society, clinicians and others who treat such illnesses have developed measures that are validated for identifying those with mental health problems.

Finally, a third related construct is **stress**. Though stress has an intuitive and colloquial understanding, it is actually a very broad construct without a clear definition. The notion of stress can relate to responses to the environment (stressor) or to one's response to the environment (either perceiving something as stressful or reacting negatively to a stressor). Perhaps most relevant for understanding the effects of the CTC is **parenting stress**, or negative feelings related specifically to individuals' roles as parents.

Clearly each of these things are interrelated and overlapping. For example, those experiencing mental health problems have worse subjective well-being (Diener, Sapyta, and Suh 1998). Those experiencing high levels of parenting stress are more likely to report struggling with mental health (Deater-Deckard 2008).

Beyond the definitions of the varied constructs that encompass psychological well-being, there are a number of challenges related to ways of measuring these constructs. First, the methods used to capture psychological well-being tend to be self-reported, with a few exceptions such as the use of salivary cortisol to measure chronic stress. Second, considering family systems, measures typically focus on adults' perspectives of themselves and rarely capture parents' subjective assessments on behalf of their children, such as being proud of a child, happy for a child, or worried about a child, or how pride, happiness, or worry can momentarily shift as well as vary across children within a family. Third, as proposed in child development literature, parents often shield their emotional well-being from children when they can, and children, in turn, perceive this shielding (Morris and Smith 2022); therefore, how parents subjectively feel and their emotional states may not always translate into their parenting practices or other inputs that can influence children's developmental outcomes. Indeed, analyses of parents' time spent with children on learning activities does not always translate to feelings of meaning or happiness or enjoyment (Kalil et al. 2020). Severe mental health problems, however, such as major depression, are associated with more withdrawn parenting behaviors and increased child behavior problems (Lovejoy et al. 2000). Finally, aspects of psychological well-being can be momentary or chronic, and the existing measures tend to focus on longer-term, more chronic measurement (though the use of daily surveys to capture day-to-day fluctuation in mood [e.g., Ananat and Gassman-Pines 2021] is a notable exception).

Psychological well-being: theories informing the impact of economic status and societal change

Whereas any one social science (or adjacent) theory may be backed by empirical evidence, none offers clear-cut guidance for how an infusion of income through a tax credit targeted to families with children may uniformly affect psychological well-being.

Models theorizing the impact of negative income shocks (e.g., the family stress model, described below) may not translate well to generating hypotheses or interrogating how positive income shocks, such as CTC payments, might be expected to affect parent stress and mental health. Theories, and resulting implications for measurement, have not been nimble to the shifting contemporary demography of U.S. families and the intersection of family and work life, which dramatically differs from historical periods in ways that center on the economic and social upheaval from the loss of white male earnings. These also do not reflect the realities of women

and mothers or the stressors from historical and contemporaneous racism and discrimination against marginalized U.S. populations, nor the growing diversity of immigrant populations. Theories do not differentiate the ways in which incremental income gains may be similar or different depending on starting income levels, or the ways in which predictability and certainty of income (implicit opportunity and bandwidth costs) factor in and, in turn, how emotional states can vary even though stress and subjective well-being might not. Finally, while many of these theories may be marshaled to offer guidance on potential ways in which income boosts might harm people and caregivers, they have yet to be used to help guide or digest evidence to date.

Economic theory. Economic theories posit that absolute income and its crude aggregations at a national level will be positively related to a population's overall satisfaction and happiness, and thereby overall social welfare (Ball and Chernova 2008; Sacks, Stevenson, and Wolfers 2010). Empirical investigations have, however, shown that happiness plateaus over time, at certain income levels, or, more generally, happiness appears to vary according to comparative reference groups (known as the Easterlin Paradox; Easterlin 1974). One explanation for this paradox is the influence of social comparison (Boyce, Brown, and Moore 2010). Additional supporting evidence on the role of relative, as opposed to absolute, income includes its relationship with mental health, particularly heightened for women (Rothert, VanDerwerken, and White 2020); the unfavorable associations of deviations from permanent income with life satisfaction (D'Ambrosio, Jäntti, and Lepinteur 2020); and decreased feelings of well-being associated with relative deprivation (Chen 2015). More recent empirical work shows thresholds or tipping points of income associated with higher hope (Pleeging, Burger, and van Exel 2021), suggesting that initial states of income are not invariant to responses of subjective well-being. In summary, a contemporary view of the economics literature concludes that absolute income, and GDP as its aggregate equivalent, are inversely related to a population's happiness (and life satisfaction), whereas one's relative income seems to be positively associated with subjective well-being and positive emotion (Blanchflower 2021; Brady, Curran, and Carpiano 2023). If ordinal ranking matters as much or more than absolute levels of resources, it then follows that redistributive policies, such as the 2021 expanded CTC, should have stronger influence on subjective well-being in nations with high (or higher) levels of income inequality (Kang and Rhee 2021).

The family stress model. Complementary to economic theories in understanding the psychological impact of income shocks due to societal or economic upheavals is the family stress model, which originated from Glen Elder Jr.'s seminal work studying families during the Great Depression (Elder 1974). Elder showed that paternal job loss during the Depression increased parental stress and worsened mental health, which, in turn, negatively affected family functioning and child well-being. Elder's family stress model has since been widely applied by developmental and family scientists (and by social scientists more generally) to generate hypotheses related to family income loss and child development (e.g., Barnett 2008; National Academies of Sciences, Engineering, and Medicine 2019; Neppl, Senia, and Donnellan 2016). Income loss is predicted to worsen parental mental health (and thus disrupt and interfere with quality of parenting and co-parenting); conversely, this model has also been used to hypothesize that income gains are predicted to improve mental health (and thus enhance and support the quality of parenting and co-parenting). One implication of the Elder family stress model (Elder

1974) and its extensions by Conger and colleagues (Conger et al. 1992; Conger, Conger, and Martin 2010) is the focus among psychologists in developing scalable and validated measures of general (as opposed to only clinical) psychological health and symptoms of distress.

Human (lifespan) development. While both economic theories and family stress models are relatively agnostic about children outside of their general presence in the household, human development, and related family systems, theory contributes to the ways in which the psychological health and distress of parents respond to, interact with, and fluctuate according to children's developmental demands beyond pure physical or financial resources (e.g., child care is more expensive for infants; some infants may be more emotionally demanding than other infants; Bronfenbrenner 1979; Bronfenbrenner and Morris 2007; Sameroff 2009). Controlling for financial distress or the ability to make ends meet, the presence of children is associated with greater happiness (Blanchflower and Clark 2021), shown in both lower-income and higher-income countries. This view suggests the importance of a child-development-specific orientation in the examination of parental psychological health and stress, including age (social, physical, cognitive maturation), temperament, and related attributes.

Physiology of economic adversity, racism, and discrimination. The impact of economic resources may be accumulated and felt beyond point-in-time observations of outcomes and behavior typically implicated in the above-mentioned theories. Economic adversity can present its toll through physical, physiological, and biological responses, such that the ways in which higher income may potentially reduce this toll emerge in micro-level physiological outcomes such as cortisol and allostatic load. Accumulated effects (potentially over generations) of poverty, racism, and discrimination as chronic stressors may or may not be as responsive to shifts in contemporary economic resources nor show up in self-reports of episodic stress such as anxiety (Geronimus 2023; McEwen 1998).

Cognitive and social psychology and decision making. Cognition and emotion are deeply intertwined (Eich et al. 2000) in general. Specifically, contexts of financial resource scarcity and instability can affect cognitive attention and capacity, which impact decision-making capacities and emotional states (Gennetian and Shafir 2015; Mullainathan and Shafir 2013; Shah, Mullainathan, and Shafir 2012). By alleviating the cognitive drain of low and unstable resources, higher income via tax credits may improve attention, working memory, and mental focus to budget, to be productive at work, and to feel relief or satisfaction (Haushofer and Salicath 2023). At the same time, the relationships between cognitive capacity and well-being may be reciprocal or bidirectional, with evidence that better well-being can serve to reduce cognitive load (Hawthorne, Vella-Broderick, and Hattie 2019). Related literature on the administrative burden of psychological costs associated with engaging with government programs and policies, including trust, stigma, and fear, can also bleed over to emotional states (Herd and Moynihan 2018).

Findings so far: the impact of the 2021 CTC on psychological well-being

The empirical studies examining the impact of the 2021 CTC on psychological well-being were not generated from a basic science motivation, in that they were not driven by theoretical or

measurement goals. Rather, this work has largely capitalized on existing data in an opportunistic manner. Although theoretically grounded primary data collection was likely not possible in the midst of an ongoing pandemic, during which the policy and social context were rapidly changing, the studies in this review mainly used secondary data analysis to examine psychological well-being outcomes, taking advantage of data that had been collected for other purposes.

Overall, the findings on the effects of the monthly CTC on psychological well-being are narrow and mixed. We summarize the findings across methodological approach and outcomes in Table 1, indicating findings that reached conventional levels of statistical significance (Appendix Table 1 provides details on each study).

A full appraisal of mechanisms affecting psychological well-being is beyond the scope of our review; however, empirical work to date examining the impact of the expanded CTC looks at mechanisms related to anticipated and expected reductions on financial stress. When simply asked directly about whether the monthly CTC payments made them feel less stressed financially, the vast majority of people reported that they did (Center for Law and Social Policy 2021). This was particularly true for Hispanic and non-Hispanic Black parents, who were more likely than White parents to say that the monthly CTC payments made them a lot less stressed financially (Burnside 2022). Thus the expanded CTC may have indirectly affected psychological well-being via its reductions in financial stress.

In this section we focus on the studies that examine the direct effect of the expanded CTC on outcomes that fall under the umbrella of psychological well-being. We included ten manuscripts in our review (see Appendix Table 1 for details). Two of these manuscripts used multiple research strategies, so results from 11 research strategies are included. Finally, many reported multiple outcomes; across manuscripts, research strategies, and outcomes, we synthesized reports on 25 findings. The summary of the findings appears in Table 1.

The manuscripts generally adapted a similar technique (difference-in-difference) to derive causal estimates, comparing different groups before the expanded CTC was rolled out on July 15, 2021, and after the expansion. In three manuscripts (Batra, Jackson, and Hamad 2023; Collyer et al. 2022; Pignatti and Parolin 2023), the research strategy is that the first differences compare parents with dependent children to adults without children. In six manuscripts (Ananat et al. 2024; Cha, Lee, and Tao 2023; Collyer et al. 2022; Glasner et al. 2022; Kovski et al. 2023; Pignatti and Parolin 2023), the research strategy is that the first differences compare parents who would go on to receive different monthly CTC payment amounts due to the number and ages of their children. In all manuscripts using at least one difference-in-difference strategy, the second difference compares pre-expansion to post-expansion time periods. Pre-expansion time periods generally cover spring 2021 through July 15, 2021, though some include earlier data as well. In all cases, the post-expansion period ended in December 2021 or January 2022. Finally, two manuscripts each use a research strategy that simply compares the pre-CTC period to the post-CTC period among families with children, controlling for predicted CTC payment amount (Steimle, Gassman-Pines, and Ryan 2024; Steimle, Ryan, and Phillips 2024).

Although psychological well-being encompasses many distinct constructs, the studies examined a limited set, primarily focused on depression and anxiety. In four studies, the outcome was likelihood of Major Depression or Generalized Anxiety using the PHQ-2 (Kroenke, Spitzer, and Williams 2003) and the GAD-2 (Kroenke et al. 2007). The PHQ-2 includes two questions about depressive symptoms; the GAD-2 includes two questions about anxiety symptoms. In each, answers to the two questions are combined and those scoring higher than a validated cutoff are considered to be "at risk" for diagnosable Major Depression or Generalized Anxiety. In four studies, the extent of anxiety symptoms was considered using the either the sum of the two GAD-2 questions or, in one case, an expanded anxiety scale (GAD-7; Spitzer et al. 2006). In five studies, the extent of depressive symptoms was considered using the either the sum of the two PHQ-2 questions or, in two cases, an expanded depression scale (CES-D; Radloff 1977). Across the studies, several other measures were used, primarily focusing on mental health, including general psychological distress using the K6 (Kessler et al. 2003), whether the respondent used counseling or therapy for mental health (National Center for Health Statistics 2022), and "the number of bad mental health days in the last month" (Centers for Disease Control and Prevention 2023).

Among those studies that compared adults with and without children in the pre- and post-expansion periods, three studies examined six outcomes finding significant improvement in well-being (decreases in risk for Major Depression and Generalized Anxiety) in two and no effect in the other four, including general psychological distress, whether the respondent used counseling or therapy for mental health, whether the respondent used prescription medication for mental health, and the number of bad mental health days in the last month. In all three of those studies, the focus was on the general population across income levels, including both national samples and one New York City–specific sample.

Among those studies that compared parents with different numbers and ages of children, five studies examined seven outcomes. Overall, findings were mixed, even with identically measured outcomes. For example, three studies used the GAD-2 to examine changes in the likelihood of generalized anxiety; one of the three found that the CTC reduced anxiety, but the other two found no statistically significant effects. Across all outcomes, studies found significant reductions in mental health problems in 6 of 16 findings. The five studies included both the general population and low-income families specifically, including both national samples and one Philadelphia-specific sample.

Finally, two studies that used a pre–post design to investigate the effect of the CTC found significant reductions in mental health problems, including reduced depressive symptoms, anger/irritability, and overall psychological distress. One of those studies focused on families with children in early childhood (younger than age 6) across the country, and the other focused on families in central Pennsylvania with school-aged children.

Comparison with related literature on unconditional cash transfers

Findings emerging from randomized control studies of unconditional cash transfers in the U.S. over a similar time period (2020 onward) offer additional evidence, and a review of these studies

similarly shows mixed findings on psychological well-being (Gennetian, Sonterblum, and Kwon 2023). A study of a one-time lump-sum transfer to recipients of Supplemental Nutrition Assistance Program (SNAP) benefits in 12 states finds reductions in anxiety (Pilkauskas et al. 2023), yet a study of a similarly sized lump-sum transfer in a Northeastern city found slightly increased anxiety (Jaroszewicz et al. 2022). A monthly unconditional cash transfer to families with low income starting at the birth of a child shows no improvements in parenting stress, maternal mental health, or maternal reports of happiness or life satisfaction (Gennetian et al. 2024; Magnuson et al. 2022). We note that these and related findings contrast to findings from low- to middle-income nations that generally show improved subjective well-being in response to receipt of unconditional cash transfers (McGuire, Kaiser, and Bach-Mortensen 2022).

Discussion and conclusion

Findings, guiding theories, and resulting measurement approaches informing the impact of the expanded CTC and related infusions of income are inconclusive. Our review suggests that it is too early to take stock of evidence. At the same time, we should not dismiss what we are learning. This is an area in dire need of empirical innovation and exploration as well as improved interdisciplinary theorizing. Further, the policy objectives for capturing psychological well-being need better alignment with measurement. Where does this leave policy and policy-based evidence building?

Taken together, the existing findings suggest a need for improved guidance. The family stress model suggests that income loss worsens parental mental health and income gains improve mental health. Economic theory suggests that how people fare relative to social comparison groups may matter as much or more to their subjective well-being than an increase in net financial resources; yet the methodologically motivated comparison groups may not carry equal conceptual weight. (A comparison of households with children versus households without children may be empirically pragmatic but may not map onto conceptually grounded hypotheses similar to other empirically pragmatic comparison groups. For example, in many of the studies reviewed above, the post-expansion period coincided with the broad reopening of schools across the country; households with school-aged children likely experienced different increases in stress associated with school reopening in the post-expansion period than households without children, for whom the reopening of schools was not as salient or meaningful.) Alignment of theories with measurement and methodology is one important next step.

Second, multiple aspects of psychological well-being may be experienced in ways that can appear conflicting yet can also be consistent. Few studies so far offer data on the range of positive and negative outcomes or on co-occurrence of negative and positive emotional or psychological states. In the context of a global pandemic, and with deeply unequal health and mortality burden, additional income from the government could have been perceived as a blessing and one for which parents were deeply grateful, but life overall may have still been stressful. Given the multitude of stressful circumstances families may have been experiencing during the pandemic, it may not actually be all that surprising that providing additional income did not alleviate all stress and uniformly improve mental health. It is clear that the 2021 CTC expansion improved many socially desirable outcomes, including the share of children in

families with adequate funds for food (see for example, Ziliak [forthcoming]), but, at the same time, it may not have improved people's psychological well-being.

Third, measurement of psychological well-being appears to be (reasonably) opportunistic. The majority of studies that examined these outcomes used validated short-form (i.e., a small number of survey items) depression and anxiety measures whose purpose is to screen individuals for serious mental health problems. Such measures, however, do not cover the wide array of emotions that individuals experience, including nonclinical levels of sadness or worry and also positive emotions such as joy, hope, and relief. These measures are also not designed to capture general mental health well-being. They also do not facilitate investigation of feelings that are brief or episodic but nevertheless important in people's daily lives. Further, positive emotional states related to children are largely not measured and not known, nor are children's direct reports obtained (if supporting children's well-being is a goal, we might want to know whether or how parental psychological well-being is felt or experienced by children). Qualitative research can be one arena to improve our understanding of capturing feelings directly from parents and quantifying joys and stresses as well as pride and negative feelings that can happen in concert.

This review suggests that more attention be paid to policy discussions regarding alignment of objectives in the realm of psychological well-being. A policy focus on psychological well-being has emerged from a basic science perspective because it is thought to be a key mechanism of children's well-being and economic productivity, yet until that question is settled (and it's far from it), drawing any policy-relevant conclusions would be premature.

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Steimle, Samantha, Rebecca M. Ryan, and Deborah A. Phillips. 2024. How do different forms of cash transfers relate to food insecurity and psychological distress? Working paper.

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Table 1. Summary of Findings from Studies as of January 2024 on the Impact of the Expanded CTC on Psychological Well-Being

	Difference-in-difference: those with children vs. no children	Difference-in-difference: CTC amount	Pre-CTC to post-CTC change	Summary
Anxiety: GAD-2 clinical cutoff	↓	↓ / – / –		2 of 4
Anxiety symptoms		↓ / – / –		1 of 3
Depression: PHQ-2 clinical cutoff	↓	↓ / – / –		2 of 4
Depressive symptoms		↓ / ↓ / – / –	↓	3 of 5
Anger/irritability			↓	1 of 1
Psychological distress	–	–	↓	1 of 2
Used mental health counseling or therapy	–			0 of 1
Prescribed medication	–			0 of 1
Life satisfaction		–		0 of 1
Number of bad mental health days	–	↓		1 of 2

Note: ↓indicates significant decrease in outcome; dash indicates nonsignificant effect. The summary column presents counts of statistically significant effects among the total effects reported across all studies and all methodological approaches. The pre-CTC and post-CTC periods are defined differently across studies. Many studies include multiple outcomes; this summary treats outcomes as independent. Two of the included studies are from working papers that are not publicly available. One study's findings on mechanisms is not included.

Appendix Table 1. Studies Included in the Review

Paper	Data source	Sample	Method: treated and control groups	Method: definition of pre- and post-CTC periods	Method: other relevant details	Outcome	Result (coeff., SE/CI, significance)
Batra, Akansha, Kaitlyn Jackson, and Rita Hamad. 2023. Effects of the 2021 expanded child tax credit on adults' mental health: A quasi-experimental study. *Health Affairs* 42 (1): 74–82. doi:10.1377/hlthaff.2022.00733.	U.S. Census Household Pulse Survey	Nationally representative repeated cross-section; n = 812,314	Binary Treatment: Individuals with resident children younger than 18 years Control: Households without children	**Pre-CTC:** 6 waves of pre-policy data (April 2021–June 2021) **Post-CTC:** 7 waves of post-policy data (July 2021–December 2021)	Covariates: gender, race/ethnicity, income, marital status, number of children, and education FE for biweekly survey wave to account for secular trends in mental health that occurred during this period due to underlying factors affecting all individuals Also examined differences among subgroups	Depression (PHQ-2; score 3+) Anxiety (GAD-2; score 3+) Utilization of mental health counseling or therapy within the last 4 weeks Prescribed medication to help with emotions, behavior, or concentration	ITT (−1.7, 1, $p <$ .01) ITT (−3.4, 1, $p <$ .01) ITT (0.0, 1, n.s.) ITT (0.3, 1.1, n.s.)
Collyer, Sophie, Jill Gandhi, Irwin Garfinkel, Schuyler Ross, Jane Waldfogel, and Christopher Wimer. 2022. The effects of the 2021 monthly child tax credit on child and family well-being: Evidence from New	NYC Poverty Tracker and Early Childhood Poverty Tracker	Surveys with New Yorkers fielded between May 5 and December 31, 2021; women are overrepresented as the survey was administered to	Binary Treatment: Respondents who have resident children younger than 18 years Control: Households without children Continuous Exploiting variations in the monthly net income gains that families could	**Pre-CTC:** Surveys completed between May 5, 2021, and July 14, 2021 **Post-CTC:** Surveys completed	Covariates: age, sex, education status, immigration status, race/ethnicity, and marital status of the respondent, survey wave, and the panel	Continuous measure of psychological distress (K6)	Binary ITT (−.305, .225, n.s.) Continuous ITT all households (−.058, .046, n.s.) Continuous ITT households with children (−.028, .049, n.s.) Binary TOT (−.452, .333, n.s.)

York City. *Socius* 8. doi:10.1177/23780231221141165.		a focal child's primary caregiver; n = 7,001	realize under the CTC expansion (among all households and just those with children)	between July 15, 2021, and December 31, 2021	cohort FE for the month in which the survey was administered Also examined differences among subgroups	Moderate psychological distress (K6 5+)	Continuous TOT all households (−.080, .065, n.s.) Continuous TOT households with children (−.039, .069, n.s.) Binary ITT (−.027, .024, n.s.) Continuous ITT (−.008, .005, n.s.) Continuous ITT households with children (−.006, .006, n.s.) Binary TOT (−.040, .035, n.s.) Continuous TOT all households (−.011, .008, n.s.) Continuous TOT households with children (−.009, .009, n.s.)
Kovski, Nicole, Natasha V. Pilkauskas, Katherine Michelmore, and H. Luke Shaefer. 2023. Unconditional cash transfers and mental health symptoms among parents with low incomes: Evidence from the 2021 child tax credit. *SSM - Population Health* 22: 101420. doi:10.1016/j.ssmph.2023.101420.	Data collected in partnership with Propel, a nationwide provider of a free mobile application (app) that assists over 5 million U.S. families in managing their SNAP benefits	National sample of parents with co-residential children under 18 years old; n = 15,593	Continuous Policy-induced variation in the size of CTC benefits	**Pre-CTC:** two surveys (June 1–14, 2021, and July 1–14, 2021) **Post-CTC:** all six months of the monthly CTC payment ending in January 2022	Covariates: age, race/ethnicity, gender, education, place of residence, partnership status, presence of SNAP emergency allotments, presence of pandemic electronic benefit transfers, presence of	Depression (PHQ-2; 3+) Anxiety (GAD-2; 3+) Depression (PHQ-2; 4+) Anxiety (GAD-2; 4+)	ITT (−.004, .001, $p < .01$) TOT (−.017, .006, $p < .01$) ITT (−.005, .001, $p < .01$) TOT (−.021, .006, $p < .01$) ITT (−.004, .001, $p < .01$) TOT (−.016, .006, $p < .01$) ITT (−.005, .001, $p < .01$) TOT (−.021, .006, $p < .01$)

					extended federal unemployment insurance, and household size FE for state of residence and survey month	Continuous depression score (PHQ-2) Continuous anxiety score (GAD-2)	ITT (−.017, .006, $p < .01$) TOT (−.074, .026, $p < .01$) ITT (−.021, .006, $p < .01$) TOT (−.092, .027, $p < .01$)
Glasner, Benjamin, Oscar Jiménez-Solomon, Sophie M. Collyer, Irwin Garfinkel, and Christopher T. Wimer. 2022. No evidence the Child Tax Credit expansion had an effect on the well-being and mental health of parents. *Health Affairs* 41 (11): 1607–15. doi:10.1377/hlthaff.2022.00730.	Understanding America Study	Nationally representative panel; n = 7,198	<u>Continuous</u> Policy-induced variation in the size of CTC benefits	**Pre-CTC:** Surveys started between June 1, 2017, and July 14, 2021 **Post-CTC:** Surveys started between July 15, 2021, and December 5, 2021	Covariates: age, sex, education, household income, race/ethnicity FE for month, state, and individual	Cantril's ladder Generalized Anxiety Disorder 7 (GAD-7) Center for Epidemiologic Studies Depression Scale (CES-D)	ITT (−.0005, not included, n.s.) ITT (.0005, not included, n.s.) ITT (−.0012, not included, n.s.)
Cha, Eunho, Jiwan Lee, and Stacie Tao. 2023. Impact of the expanded child tax credit and its expiration on adult psychological well-being. *Social Science & Medicine* 332: 116101. doi:10.1016/j.socscimed.2023.116101.	U.S. Census Household Pulse Survey (HPS)	Nationally representative repeated cross-section of adults ages 18–65 in households with at least one child under age 18 and a pre-tax 2019–2020 income below $150,000; n = 167,772	<u>Continuous</u> Policy-induced variation in the size of CTC benefits	**Pre-CTC:** April 2021 to July 14, 2021 **Post-CTC:** August 2022 to January 10, 2022	Covariates: age, gender, race/ethnicity, education, employment status, and whether family's child care was impacted by COVID-19 FE for state	Psychological Distress (PHQ-4; 6+) Psychological Distress (PHQ-4; 3+) Depression (PHQ-2; 3+) Depression (PHQ-2; 2+) Anxiety (GAD-2; 3+) Anxiety (GAD-2; 2+)	ITT (−.00016, .00098, n.s.) ITT (−.00298, .00109, $p < .01$) ITT (−.00046, .00095, n.s.) ITT (−.00244, .00109, $p < .01$) ITT (−.00103, .00103, n.s.) ITT (−.00286, .00108, $p < .01$)
Park, JungHo, and Sujin Kim. 2023.		Nationally representative	Mediation analysis using data from July 2021–	N/A	Covariates: age, sex,	Depression (PHQ-2)	Relationship between CTC and

Child tax credit, spending patterns, and mental health: Mediation analyses of data from the U.S. Census Bureau's Household Pulse Survey during COVID-19. *International Journal of Environmental Research and Public Health* 20 (5): 4425. doi:10.3390/ijerph20054425.	U.S. Census Household Pulse Survey	repeated cross-section of adults; n = 98,026	July 2022 when CTC was in effect		race/ethnicity, marital status, count of kids, and number of household members Socioeconomic status including education, household income, status of public and private health insurance, location of residence of survey respondents, and metropolitan statistical areas (MSAs)		PHQ-2 was significantly mediated by spending CTC to purchase food (OR = .959, 023, p = .001), rent/mortgage (OR = .958, .015, p < .001), child care (OR = .989, .008, p = <.01), school transportation (OR = .997, .002, p < .05), utilities (OR = .968, .009, p < .001), vehicle payments (OR = .990, ±.006, p < .01), debt (OR = .976, .013, p < .001), savings/investment (OR = 1.029, .021, p < .01)
						Continuous anxiety score (GAD-2)	Relationship between CTC and GAD was significantly mediated by spending CTC on food (OR =.958, .02, p < .001), rent/mortgage (OR = .965, .013, p < .001), child care (OR = .988, .007, p = .001), school tuition (OR = .994, .005, p < .05), school transportation (OR = .996, .002, p < .005), utilities (OR =.969, .01, p < .001),

							vehicle payments (OR = .988, .005, $p < .001$), debt (OR = .975, .011, $p < .001$), savings/investment (OR = 1.043, .017, $p < .001$)
Steimle, Samantha, Rebecca G. Ryan, and Deborah. A. Phillips. 2024. How do different forms of cash transfers relate to food insecurity and psychological distress? Working paper.	Rapid Assessment of Pandemic Impact on Development–Early Childhood (RAPID-EC)	National surveys among families with young children (<6 years old); n = 16,214	N/A	**Pre-CTC:** several waves between January and June 2021 **Post-CTC:** several waves between July 15, 2021, and the second week of January 2022	Covariates: education, race/ethnicity, age of reference child, income-to-needs ratio, survey month	Continuous anxiety score (GAD-2)	Significant decrease post-CTC expansion/receipt
						Continuous depression score (PHQ-2)	Significant decrease post-CTC expansion/receipt
						Continuous stress score	Significant decrease post-CTC expansion/receipt
						Continuous loneliness score	Significant decrease post-CTC expansion/receipt
						Composite average psychological distress score	Significant decrease post-CTC expansion/receipt
						Child Behavior Checklist	No significant association

Steimle, Samantha, Anna Gassman-Pines, and Rebecca Ryan. 2024. The expanded Child Tax Credit and low-income families' psychological well-being: Associations across and within months of receipt? Manuscript in preparation. Department of Psychology, Georgetown University.	Data gathered through daily text-message surveys from January through October 2021 from a set of 181 families with children in pre-kindergarten to 5th grade at the time of enrollment living in two semi-rural Pennsylvania counties	Daily text-message surveys from a set of 146 families with low incomes and children in pre-kindergarten to 5th grade at the time of enrollment living in two semi-rural Pennsylvania counties; n = 14,500 family-days	<u>Continuous</u> Policy-induced variation in the size of CTC benefits	N/A	Covariates: race/ethnicity, education, SNAP receipt, week/weekend	Parent mood scale (worried/ depressed) Parent mood scale (angry/ irritable) Parent lost temper with child Parent punished child Child mood scale (sad/worried) Child behavior scale (uncooperative)	Receipt of expanded CTC payments coincided with lower rates of psychological distress though the payment amount did not consistently moderate the relationship between CTC payments and outcomes
Pignatti, Clemente, and Zachary Parolin. 2023. The effects of an unconditional cash transfer on mental health in the United States. IZA Discussion Paper No. 16237. https://docs.iza.org/dp16237.pdf.	Behavioral Risk Factor Surveillance System (BRFSS)	Nationally representative sample that has been administered continuously in the U.S. since 1984 and is the largest health related survey worldwide; n ≈ 400,000	<u>Binary: child vs. no child</u> Treatment: Respondents who have resident children younger than 18 years Control: Households without children <u>Binary: young child vs. older child</u> Treatment: Respondents who have a child < age 5 Control: Respondents who have a child aged 5–17	**Pre-CTC:** January, 2021 to August 14, 2021 **Post-CTC:** August 15, 2021, to December 15, 2021	Covariates: sex, age, marital status, number of children in the household, race/ethnicity, education, household income FE for month and state	Number of bad mental health days over the previous month	Child vs. no child (precisely estimated zero) Child <5 vs. 5–17 (0.094 SD units, not specified, $p < .10$)
Ananat, E.O., Anna Gassman-Pines, Garrett Baker, and Emma Foley. 2024.	Survey data from the Philadelphia Work-Family Project	Parents working in hourly positions in the service sector	<u>Continuous</u> policy-induced variation in the size of CTC benefits	**Pre-CTC:** May 2020 to May 2021 **Post-CTC:**		Depression (PHQ-2; 3+)	.062, .073, n.s.

Effects of the expanded Child Tax Credit on the material hardship and mental health of low-wage service workers with young children. Manuscript in preparation. Sanford School of Public Policy, Duke University. https://papers.ssrn.com/sol3/papers.cfm?abstract_id=4864443	(retail, food service, hotel) with a young child aged 2–7 in fall 2019	August 2021 to December 2021	Anxiety (GAD-2; 3+) Continuous anxiety score (GAD-2) Continuous depression score (PHQ-2)	-.017, .067, n.s. -.050, .269, n. s. .025, .296, n.s.

Note: CTC = Child Tax Credit; FE = fixed effects; ITT = intent-to-treat; N/A = not applicable; n.s. = nonsignificant; TOT = treatment on the treated.