






Can resilience change over time? Patterns and transitions in resilience among young children involved with the child welfare system

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Funding information

Eunice Kennedy Shriver National Institute of Child Health and Human Development, Grant/Award Number: R03HD100603; National Institute on Drug Abuse, Grant/Award Number: K01DA050778

Abstract

This study examined transitions in resilience profiles and the role of caregiver risk and protective factors in resilience transition probabilities over 18 months among children involved with the child welfare system, using latent profile analysis and latent transition analysis. The sample included 486 children (48% female, baseline $M_{age} = 3.49$). There were three resilience profiles at Time 1 (19.9% low emotional behavioral, 26.1% low cognitive, 54.0% multidomain) and two profiles at Time 2 (18.9% low emotional behavioral, 81.1% multidomain). Caregiver mental health problems were negatively associated with membership in the multidomain resilience group at Time 1. Higher levels of cognitive stimulation were associated with initial and continued membership in the multidomain resilience group. Implications for resilient child development are discussed.

Breaking the common narrative that children who experience maltreatment during childhood are predetermined to have negative outcomes, resilience scientists have provided empirical evidence of resilience among children with maltreatment histories (Dubowitz et al., 2016; Wekerle, 2013). Although there is no universal definition

of resilience (Yoon, Howell, et al., 2021), resilience is commonly understood as the dynamic process and mechanisms associated with positive adaptation following exposure to adversity (Luthar et al., 2000). Despite notable advancement in resilience research in the context of maltreatment, less attention has been paid to the changes

Abbreviations: BLRT, bootstrap likelihood ratio test; CBCL, Child Behavior Checklist; LPA, latent profile analysis; LTA, latent transition analysis; PLS, Preschool Language Scale; RPM, resilience portfolio model; SSRS, Social Skills Rating System; VABSS, Vineland Adaptive Behavior Scale Screener.

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in resilience profiles over time, particularly during early childhood (defined here as ages 3–5). Identifying transition patterns in resilience profiles and factors that predict the transition in resilience can inform the design of intervention services. We applied a person-centered analytic approach to examine change in resilience profiles across the domains of social, emotional, behavioral, and cognitive functioning among young children involved with the child welfare system. Further, we investigated how caregiver factors are linked to initial and transition patterns in resilience profiles and determined if these links were moderated by child gender.

Early childhood maltreatment and resilience

Child maltreatment is a parent's or caregiver's act or failure to act that does not serve any positive purpose and can lead to (or create a risk of) serious physical or psychological harm to a child (US DHHS, 2022). Each year, approximately 4 million referrals are made to U.S. child protective services agencies for alleged child abuse and neglect, and more than 600,000 children are found to be victims of maltreatment after investigation (US DHHS, 2022). Children and families involved with the child welfare system often have a constellation of risk factors and challenges, such as caregiver mental health problems, substance use, and poverty (Austin et al., 2020), and entry into the child welfare system can add another layer of burden and trauma (e.g., removal from home and placement in out-of-home care) to already vulnerable children. Numerous studies have documented high levels of emotional and behavioral problems among children involved with the child welfare system (Horwitz et al., 2012; McCrae, 2009).

Young children are at the highest risk of experiencing child maltreatment. The rate of maltreatment victimization generally declines with a child's age, making young children more vulnerable to maltreatment than older children. In 2020, 46.5% of the victims of child maltreatment were 5 years old or younger (US DHHS, 2022). Early childhood maltreatment can have long-lasting adverse effects on one's health and development over the life course. Studies have shown that children who experienced maltreatment in their early years are at increased risk for adverse health and developmental outcomes across the life span, including childhood internalizing and externalizing problems, difficulties in peer relationships, poor school performance, and criminal activity, psychopathology, and chronic health problems in adulthood (Jaffee, 2017; Kisely et al., 2018).

More recently, some researchers have shifted their focus and adopted a strengths-based paradigm to understand positive outcomes among children with maltreatment, moving beyond pathology and other negative outcomes. Studies have found that children who experience maltreatment earlier in life can still display positive adaptation

and functioning in different areas of development (Afifi & MacMillan, 2011; Dubowitz et al., 2016; Meng et al., 2018; Walsh et al., 2010; Yoon, Sattler, et al., 2021). Studies on early childhood maltreatment and resilience have suggested that a considerable portion of young children display adaptive functioning, strengths, and competency across multiple domains, including cognitive, language, social, emotional, physical, and behavioral domains (Dubowitz et al., 2016; Sattler & Font, 2018; Yoon et al., 2022). In the current study, we conceptualized resilience as the outcome or process of positive adaptation in the domains of emotional, behavioral, social, and cognitive functioning despite exposure to early adversity (e.g., child maltreatment and involvement with the child welfare system).

Both theoretical and empirical evidence suggests that resilience is a flexible, mutable process that may change over time (Klika & Herrenkohl, 2013; Masten & Powell, 2003; Walsh et al., 2010). Although longitudinal studies are best suited to account for the fluidity of resilience, most of the existing research on resilience among maltreated children has been cross-sectional. Within the few studies that examined resilience longitudinally, the findings have been mixed. Some studies found that resilience at one point in time was not related to resilience at a later point in time, with only 1%–5% of maltreated children maintaining resilience over time (Bolger & Patterson, 2003; Jaffee & Gallop, 2007). Other studies, however, suggested that many children maintain or even increase resilience over time (Dubowitz et al., 2016; Yoon, Sattler, et al., 2021). In a study that focused on young children who experienced or were at risk of maltreatment, 29% of the children showed resilience in behavioral, social, and developmental domains at age 4, but the rate increased to 52% at age 6 (Dubowitz et al., 2016). Overall, there is a need for a deeper examination of complex forms of change in resilience profiles over time.

The resilience framework

The current study is guided by a general resilience framework (Hamby et al., 2018; Luthar et al., 2000; Masten & Powell, 2003; Rutter, 2000). The resilience theoretical framework adopts a strengths-based lens to understand the protective factors, processes, and pathways through which individuals achieve adaptive functioning in the face of adversity (Luthar et al., 2000; Rutter, 2000). The resilience portfolio model (RPM; Grych et al., 2015; Hamby et al., 2018) is one such strengths-based framework. The RPM posits that resilience is a process rather than a fixed feature and that resilience is shaped by multi-level socio-ecological systems (e.g., individual, family, community) and strengths (e.g., self-regulation, interpersonal strengths, meaning-making) that support individuals' positive development (Grych et al., 2015; Hamby et al., 2018). Building on this theoretical approach, children who have experienced child maltreatment may

obtain positive adaptation and resilience, which may manifest in different forms and patterns at different time periods, depending on the protective factors and strengths in which children are embedded.

The role of caregiver factors on resilience

To date, little is known about the factors that are associated with the patterns and transitions in resilience among young children with a history of maltreatment. Drawing from the RPM's emphasis on interpersonal strengths as a salient protective factor for resilience in children exposed to violence (Grych et al., 2015), caregiver-child relationships might play a critical role in resilience following child maltreatment. Attachment theory adds further support for examining caregiving environments and parenting as vital factors for childhood resilience. The key notion of attachment theory is that a child's relationship with a primary caregiver in the early years serves as a prototype for the child's interpersonal relationships across the lifespan and plays a significant role in later development (Bowlby, 1969). A child establishes a secure attachment to their primary caregiver if the primary caregiver remains accessible, sensitive, and responsive to the child's needs (Bowlby, 1969). Children with secure attachment are likely to develop positive representational models of self, others, and the world, which may lead to adaptive patterns of interpersonal relationships and healthy socio-emotional and behavioral adjustment (Bowlby, 1969).

The resilience literature has generally supported the tenets of attachment theory by highlighting the importance of positive parenting and close caregiver-child relationships in the development of resilience among children exposed to early adversity (Masten & Palmer, 2019). Empirical research has also consistently indicated the importance of family and caregiving environments in building resilience among children with a history of maltreatment (Afifi & MacMillan, 2011; Meng et al., 2018). One of the most widely recognized risk factors that threaten the well-being and resilience of children with a history of maltreatment is caregiver mental health problems, including caregiver depression (Afifi & MacMillan, 2011). Prior research suggests that maternal mental health disorders are associated with a higher likelihood of reports to child protective services and early child welfare involvement (Hammond et al., 2017). Caregiver mental health problems, such as anxiety and depression, can negatively affect their parenting and hinder their ability to provide warm and responsive care to their children (Middleton et al., 2009; Vreeland et al., 2019). A robust body of research has found that caregiver depressive symptoms are negatively associated with resilience in children who have experienced or are at risk for maltreatment (Dubowitz et al., 2016; Holmes et al., 2015).

Although families involved with the child welfare system due to child abuse and neglect may experience various co-occurring challenges, such as parental mental health and substance use problems, in many cases they also possess unique strengths that contribute to the development of resilience in children (Davidson et al., 2019). Caregiver warmth, which refers to the extent to which caregivers are loving, accepting, caring, and responsive to their children (Baumrind, 1991), is one such protective factor that predicts positive and adaptive child functioning following exposure to early adversity. Caregivers' warm and responsive care may foster positive caregiver-child relationships upon which children build resilience. In the maltreatment literature, caregiver warmth has been positively associated with resilience following child maltreatment (Afifi & MacMillan, 2011; Holmes et al., 2018; Meng et al., 2018).

In early childhood literature, caregiver cognitive stimulation has been highlighted as a salient protective factor for positive child development. Caregiver cognitive stimulation refers to caregivers' efforts to provide their children with opportunities, activities, or experiences that promote learning and perceptual, cognitive, and language development (Lugo-Gil & Tamis-LeMonda, 2008). Caregiver cognitive stimulation may be associated with resilience via increased vocabulary growth, language development, and emotion regulation (Lurie et al., 2021). Home-based cognitive stimulation has been linked to positive child outcomes, including children's pre-academic skills, language development, executive function skills, and socio-emotional functioning (Cabrera et al., 2020; Lurie et al., 2021). Importantly, growing evidence indicates that caregiver cognitive stimulation has similar positive effects on child development in the context of child maltreatment. Studies focusing on young children who have experienced or are at risk for maltreatment have found that higher levels of caregiver cognitive stimulation are associated with social, behavioral, and multidomain resilience (Holmes et al., 2018; Jaffee, 2007; Sattler et al., 2023; Sattler & Font, 2018; Yoon et al., 2022).

Person-centered approaches such as latent profile analysis offer another way of considering these issues by identifying patterns found among children—potentially identifying multiple distinct subgroups—versus variable-centered approaches, which by their focus on averages can obscure important variation among a population. Person-centered research on young child welfare-involved children is limited, but one prior study of early childhood resilience among Australian children known to child protective services found a 3-profile model, with one group, called typically developing, with age-appropriate skills despite maltreatment exposure, and two lower functioning groups, emotionally vulnerable and cognitively vulnerable. (Green et al., 2021). Notably, the “cognitively vulnerable” profile identified in early childhood disappeared in middle childhood in

that sample (Green et al., 2021). Considering that some children who experience other kinds of developmental challenges can get closer to their peers over time (Luu et al., 2011), it is possible that patterns could change over time, with fewer patterns indicating vulnerability as children mature. This may especially be the case in situations where children receive some kind of formal intervention (Van IJzendoorn & Juffer, 2006). Thus, we expect to see a similar pattern as found by Green et al. (2021) and extend their work to a U.S. sample with a larger range of caregiving and family characteristics.

Gender differences: Gender as a moderator

Prior studies have suggested that the female gender is associated with greater resilience following child maltreatment (Green et al., 2021; Yoon et al., 2022). However, it is unclear to what extent gender moderates the effects of caregiver risk and protective factors on the patterns and transitions in resilience among young children involved with the child welfare system remains unclear. Further, existing studies have yielded mixed results regarding gender differences in the influences of caregiver mental health problems, caregiver warmth, and caregiver cognitive stimulation on child outcomes. Some studies have found that gender moderated the association between maternal warmth and child outcomes, with the protective effects of maternal warmth being stronger for girls than boys (Linver & Silverberg, 1997; Stright & Yeo, 2014). A meta-analysis of maternal depression and child psychopathology found that gender moderated this link, whereby maternal depression had a stronger effect on girls' than boys' internalizing symptoms (Goodman et al., 2011). Conversely, other studies have found no significant gender differences in the effects of caregiver mental health problems (Harden et al., 2017; Holmes, 2013), cognitive stimulation (Jaffee, 2007), and warmth (Von Suchodoletz et al., 2011; Xing & Wang, 2017) on child outcomes.

The current study

Understanding developmental changes in resilience profiles over time and identifying their predictors is vital to informing interventions that aim to support the positive and optimal development of young children involved with the child welfare system. To this end, we focused on three research questions: (1) What are the patterns of resilience among child welfare-involved children, and to what extent does a child's membership in resilience profiles remain stable or change over an 18-month period in early childhood? (2) Are caregiver mental health problems, warmth, and cognitive stimulation significantly associated with initial and transition probabilities of resilience? and (3) Are these associations moderated by child gender? Person-centered analytic approaches, such

as latent profile analysis and latent transition analysis used in the current study, are exploratory in nature. The lack of consistent prior evidence on gender differences in the effects of caregiver factors on childhood resilience also makes the study exploratory. However, prior research on resilience profiles among young Australian children involved with the child welfare system (Green et al., 2021) and the effects of caregiver mental health, warmth, and cognitive stimulation on childhood resilience (e.g., Dubowitz et al., 2016; Holmes et al., 2018) provided a basis to build our hypothesis that higher levels of caregiver warmth, mental well-being, and cognitive stimulation would predict membership in better profiles of resilience (e.g., high competence in all domains of resilience). Thus, the current study was positioned as semi-exploratory research.

METHODS

Data source and participants

Data were from the National Survey of Child and Adolescent Well-Being (NSCAW-II). The NSCAW-II is a longitudinal study of a nationally representative sample of children and families who entered the US child welfare system due to alleged child abuse or neglect. The original NSCAW-II sample included 5872 children 0–17.5 years. Data were collected from 81 counties in 30 states in the United States across three waves (Time 1: 2008–2009; Time 2: 18-month follow-up; Time 3: 36-month follow-up), using face-to-face assessments with children, caregivers, and child welfare workers.

The current study focused on data collected at Time 1 and Time 2. Based on our interest in patterns of transitions in resilience during early childhood, we limited our analytic sample to children who were aged 3–4 at Time 1. Of the 569 children aged 3–4 at Time 1, 486 children (85.4%) had data on the indicators of resilience at either or both time points (i.e., Time 1, Time 2) and were included in the study. Approximately half of the sample were boys (52%). About 39.1% of the children were non-Hispanic white, 31.8% were non-Hispanic Black, 23.9% were Hispanic, and 5.2% were other races, including American Indian, Asian, Native Hawaiian, Pacific Islander, and multiple races. Most primary caregivers (82.2%) were the children's biological parents. About half (48.8%) of the caregivers were employed, yet over half had an income below the federal poverty level (52.2%). Three quarters of the caregivers (75.4%) had high school or more education. Specifically, 27.6% had a high school diploma, 19% had its equivalent (e.g., GED), 17.2% had a vocational diploma or certificate, and 11.6% had an associate degree, bachelor's degree or graduate degree. [Table 1](#) displays sample characteristics and [Table 2](#) presents descriptive statistics and bivariate correlations of key study variables.

TABLE 1 Sample characteristics and descriptive statistics of key variables ($N=486$).

	%	M (SD)	Range
Child age at Time 1 (in years)		3.49 (0.50)	3–4
Child age at Time 2 (in years)		4.73 (0.67)	4–6
Child sex (boys)	52.0		
Child race/ethnicity			
White, non-Hispanic	39.1		
Black, non-Hispanic	31.8		
Hispanic	23.9		
Other	5.2		
Co-occurrence (# of maltreatment types experienced)			
0	32.1		
1	55.8		
2	11.1		
3	1.0		
Out-of-home placement at Time 1	27.6		
Out-of-home placement at Time 2	23.5		
Caregiver race/ethnicity			
White; Non-Hispanic	46.8		
Black; Non-Hispanic	27.1		
Hispanic	20.9		
Other	5.2		
Caregiver gender			
Male	7.2		
Female	87.6		
Unknown	5.2		
Caregiver relationship to the child			
Biological mother	66.1		
Biological father	6.2		
Grandmother	9.3		
Grandfather	0.6		
Foster mother	12.2		
Foster father	0.4		
Others (other relative, other non-relative)	5.2		
Caregiver employment (employed)	48.8		
Caregiver's education			
Less than high school	24.6		
High school equivalence (e.g., GED)	19.0		
High school diploma	27.6		
Vocational diploma/certificate	17.2		
Associate degree, Bachelor's degree	9.8		

(Continues)

TABLE 1 (Continued)

	%	M (SD)	Range
Graduate/professional degree (e.g., Masters, PhD)	1.8		
Household income below the federal poverty level	52.2		

Note: Other race included American Indian, Asian, Native Hawaiian/Pacific Islander, and multiple race categories.

Measures

Resilience

Resilience was measured at Time 1 (baseline) and Time 2 (18-month follow-up). Four domains of resilience were assessed: cognitive, social, emotional, and behavioral. *Cognitive resilience* was captured by assessing verbal ability and receptive language skills, using the Preschool Language Scale-3 (PLS-3) expressive communication subscale and auditory comprehension subscale, respectively (Zimmerman et al., 1992). The PLS-3 is a standardized scale that assesses the language development of children up to 6 years old (Qi & Marley, 2011). The scales showed adequate internal consistency in the sample at both time points. (Expressive communication scale, Time 1, $\alpha=.87$; Time 2, $\alpha=.92$. Auditory comprehension scale, Time 1, $\alpha=.85$; Time 2, $\alpha=.91$). *Social resilience* was captured by assessing children's prosocial behavior and socialization, such as responsibility and cooperation. Caregivers' perceived level of their children's prosocial behavior was measured using the 39-item Social Skills Rating System (SSRS; Gresham & Elliott, 1990). Caregivers' rating of children's functioning and socialization in social situations was measured using the 15-item Vineland Adaptive Behavior Scale Screener (VABSS; Sparrow et al., 1993). The scales showed adequate internal consistencies at both time points. (SSRS, Time 1, $\alpha=.91$; Time 2, $\alpha=.91$. VABSS, Time 1, $\alpha=.75$; Time 2, $\alpha=.72$).

Although this study was built on the resilience and strengths-based theoretical framework, the methods used in the study could not fully reflect such strengths-based approaches, due to the lack of available measures of positive emotional and behavioral adaptation. We used the measures of psychopathology to assess emotional and behavioral resilience and reverse-coded items so that higher scores corresponded to higher levels of emotional and behavioral resilience. *Emotional resilience* considered caregiver reports of emotion regulation and the level of anxiety or depression, using the Child Behavior Checklist (CBCL-1.5-5; Achenbach & Ruffle, 2000) emotionally reactive scale (8 items; Time 1, $\alpha=.78$; Time 2, $\alpha=.77$) and anxious-depressed scale (8 items; Time 1, $\alpha=.63$; Time 2: $\alpha=.74$). For *behavioral resilience*, caregiver reports of attention and aggression were assessed using the CBCL attention problems scale (8 items; Time 1, $\alpha=.91$; Time 2, $\alpha=.72$) and aggression scale (8 items; Time 1, $\alpha=.82$; Time 2, $\alpha=.92$), respectively.

TABLE 2 Correlations among study variables ($N=486$).

	M (SD)	1	2	3	4	5	6	7	8	9	10	11
1. T1 receptive language	87.2 (20.6)	—										
2. T1 verbal ability	81.9 (19.9)	.78**	—									
3. T1 prosocial skills	88.5 (16.4)	.41**	.42**	—								
4. T1 socialization	103.6 (19.0)	.45**	.51**	.74**	—							
5. T1 emotion regulation	12.5 (3.1)	.06	.04	.14*	.11*	—						
6. T1 low anx/ depression	11.6 (2.6)	.04	.04	.09	.07	.70**	—					
7. T1 attention	5.9 (1.9)	.06	.12*	.22**	.22**	.55**	.49**	—				
8. T1 low aggression	26.3 (7.8)	.08	.10	.32**	.25**	.72**	.55**	.65**	—			
9. T2 receptive language	94.4(18.8)	.59**	.57**	.41**	.47**	.01	.02	.05	.01	—		
10. T2 verbal ability	90.2 (21.7)	.56**	.58**	.39**	.45**	.02	-.03	.06	.06	.68**	—	
11. T2 prosocial skills	98.9(17.2)	.23**	.28**	.65**	.46**	.17**	.11*	.19**	.23**	.31**	.34**	—
12. T2 socialization	93.3 (15.7)	.17**	.31**	.46**	.48**	.17**	.13**	.24**	.24**	.29**	.30**	.61**
13. T2 emotion regulation	12.5 (3.4)	.04	.05	.11	.09	.51**	.42**	.35**	.47**	-.01	-.01	.25**
14. T2 low anx/ depression	12.5 (2.9)	.07	.10	.11	.07	.47**	.52**	.30**	.37**	.06	.04	.22**
15. T2 attention	5.0 (2.1)	.06	.13*	.22**	.16**	.42**	.31**	.51**	.45**	.06	.09	.33**
16. T2 low aggression	26.4 (7.7)	.08	.14*	.24**	.22**	.46**	.31**	.43**	.59**	.02	.07	.41**
17. MH problems	0.2 (0.4)	-.05	-.03	-.11	-.14*	-.12**	-.06	-.10*	-.15**	-.02	-.01	-.04
18. Caregiver warmth	3.2 (1.2)	.05	.07	.06	.08	-.01	-.04	-.05	-.01	.09	.04	.09*
19. Cognitive stimulation	10.9 (2.3)	.28**	.25**	.35**	.32**	.01	.04	.08	.06	.36**	.24**	.22**
20. Child age (in years)	3.5 (0.5)	.62**	.59**	.28**	.30**	-.02	-.04	.02	.04	.37**	.37**	.13**
21. Child sex (female)	0.5 (0.5)	.17**	.19**	.19**	.19**	.02	-.01	.09	.09*	.14**	.17**	.15**
22. Time in OOH care	1.9 (6.0)	-.01	-.03	.03	-.01	-.03	-.01	.01	-.01	.04	.08	.02
23. > HS education	0.7 (0.4)	.20**	.22**	.19**	.17**	-.06	-.01	.01	-.02	.10	.13*	.09
24. MH Service	0.2 (0.4)	.11*	.09	.07	-.01	-.07	-.02	-.02	-.07	.05	.04	.09*
25. Poverty	0.5 (0.5)	-.21**	-.10	-.21**	-.12*	.04	.04	.02	-.02	-.14*	-.19**	-.13**
26. Co-occurrence	0.8 (0.6)	.09	.10	-.01	.01	-.10*	-.06	-.05	-.08	-.02	.06	-.02

Note: * $p < .05$. ** $p < .001$; anx, anxiety; MH, mental health. For receptive language skills, verbal ability, prosocial skills, and socialization, scores between 85 and 115 are considered to be within the normal range.

All scores on the resilience indicators were converted into z-scores to address the issue of resilience indicators having different scoring systems and distributions and to enhance comparability and interpretability. For all eight indicators of resilience, higher scores indicated greater resilience.

Caregiver mental health problems

Caregiver mental health problems were assessed at Time 1 using caseworker interviews.

Caseworkers responded to the questions that asked if the caregiver had any serious mental health problems at the time of the investigation. The item was coded dichotomously, 0 = *no*, 1 = *yes*.

Caregiver warmth

Caregiver warmth was assessed at Time 1 by the Home Observation for Measurement of the Environment-Short Form (HOME-SF; Bradley & Caldwell, 1984). The HOME-SF caregiver warmth subscale (Leventhal et al., 2004) was created using four interviewer-observed items (e.g., caregiver caressed, kissed, or hugged the child at least once; caregiver's voice conveyed positive feelings about the child). The interviewers observed the caregiver's behaviors toward the child and coded the items dichotomously (0 = *no*, 1 = *yes*). The responses to the items were summed to create a total warmth score, with higher scores indicating higher levels of warmth.

	12	13	14	15	16	17	18	19	20	21	22	23	24	25
—														
.18**	—													
.15**	.77**	—												
.32**	.59**	.55**	—											
.36**	.77**	.60**	.67**	—										
-.09	-.12*	-.10*	-.13**	-.12*	—									
.10*	-.02	-.04	-.08	-.04	.01	—								
.20**	.05	.11*	.07	.10	-.09*	.11*	—							
.14**	-.03	.01	.04	.03	-.02	.01	.13**	—						
.18**	.03	-.02	.05	.07	-.03	.03	.05	.05	—					
-.02	.00	.03	-.03	-.03	.17**	-.14**	.10*	.01	.10*	—				
.10*	-.04	.00	.05	.04	-.02	-.03	.20**	.03	-.03	-.07	—			
.12*	-.13**	-.10*	-.06	-.13**	.17**	.06	.05	.04	-.03	-.11*	-.01	—		
-.09	.07	-.02	.02	.04	-.09	-.03	-.23**	-.10*	-.08	-.20**	-.22**	.01	—	
-.01	-.09	-.07	-.12*	-.15*	.16**	-.02	.04	.11*	-.03	.16**	-.06	.07	.01	—

Caregiver cognitive stimulation

Caregiver cognitive stimulation was assessed at Time 1 by the cognitive stimulation subscale in the HOME-SF (Bradley & Caldwell, 1984). This cognitive stimulation subscale includes 14 items (interview questions and observation items) that assess the quality and quantity of stimulation in the child's home environment. The NSCAW interviewer administered interview questions to the caregivers (e.g., "How often do you read stories to your child?," "How many children's books does your child have of his/her own?," and "How many magazines does your family get regularly?") and also observed various characteristics of the physical environment (e.g., whether the child's play environment was safe, with no potentially dangerous structural or health hazards within a preschooler's range,

or if the interior of the home was dark or perceptually monotonous). The responses to the items were summed to create a total cognitive stimulation score, with higher scores indicating higher levels of cognitive stimulation.

Covariates

All covariates were measured at Time 1. Child sex was coded 0 = *male*, 1 = *female*. The length of stay in out-of-home care was measured in months. Caregiver education was assessed by caregiver self-report of their highest education level and coded as a dichotomous variable (0 = *less than high school*, 1 = *high school or more education*). Caregiver receipt of mental health services (0 = *no*, 1 = *yes*) was measured using caseworker interviews.



Poverty was assessed using caregiver self-reports of annual household income and was coded into a binary variable (0 = *at or above the federal poverty level*, 1 = *below the federal poverty level*). Co-occurrence of maltreatment types was measured by tallying the number of different forms of maltreatment experienced (sexual, emotional, physical, neglect), with a possible range from 0 to 4.

Data analysis

We conducted a series of latent profile analyses (LPAs) and latent transition analyses (LTAs) to address our research aims. LPA classifies individuals into a specific latent profile based on the pattern of their responses to continuous indicators (Collins & Lanza, 2009). LTA examines the probabilities that a person identified as being a member of a particular profile at the previous measurement occasion maintains the same profile or moves to new profiles at the following measurement occasion (Collins & Lanza, 2009; Nylund-Gibson et al., 2014). First, we fit a series of LPA models separately for Time 1 and Time 2 to identify the best-fitting LPA models at each time point. For two sets of LPA models (one for each time point), we started with a two-profile model and increased the number of profiles one by one. To select the optimal number of profiles, we considered multiple fit indices, including the AIC, BIC, a sample size-adjusted BIC (ABIC), the LMR-LRT, VLMR-LRT, and the bootstrap likelihood ratio test (BLRT) (Collins & Lanza, 2009). A lower value for the information criteria (AIC, BIC, and ABIC) indicates a better model fit. For the LRT tests, a nonsignificant *p*-value for a *k*-class model indicates that the *k* - 1 class model fits the data better than the *k*-class model. In addition to these fit indexes, additional consideration was given to the interpretability of the profiles, current theoretical understandings of resilience based on prior research, and the sample size of each profile to determine the best-fitting models.

Next, we conducted an unconditional LTA model to determine to what extent resilience profiles at baseline remained stable or changed over 18 months. Transition patterns were characterized using transition probabilities, with examinations of whether children remained in their initial profiles or moved into different profiles. Prior to estimating the conditional LTA, we conducted a measurement invariance test by constraining means of indicators equally at both time points and comparing the fit of the constrained model with the unconstrained one. If measurement invariance is satisfied, the profiles constrained to equal means at both time points are considered to represent the same profile. If measurement invariance is not satisfied, the profiles at each time point are treated as different profiles (Muthén & Asparouhov, 2011).

We then fit a conditional LTA model where caregiver factors (i.e., caregiver mental health problems, warmth, cognitive stimulation) were added as covariates to the

LTA models to test whether and to what extent caregiver factors at Time 1 were related to initial and transition patterns of resilience. Specifically, we applied the manual three-step approach, which is a robust approach to include covariates or distal outcomes in a mixture model (Vermunt, 2010). The three-step approach first estimates the unconditional mixture model, assigns all individuals into their modal latent class, and then estimates the relationship between the latent class variable and covariates or distal outcome while fixing the measurement errors (Nylund-Gibson et al., 2014). Lastly, to test the moderating effect of child gender, we added interaction terms (child gender \times caregiver mental health problems, child gender \times caregiver cognitive stimulation, child gender \times caregiver warmth) to the LTA models. Missing data were handled using the full information maximum likelihood methods (Enders & Bandalos, 2001). All LPA and LTA models were conducted using Mplus v.8 (Muthén & Muthén, 1998–2017).

RESULTS

Resilience profiles at time 1 and time 2

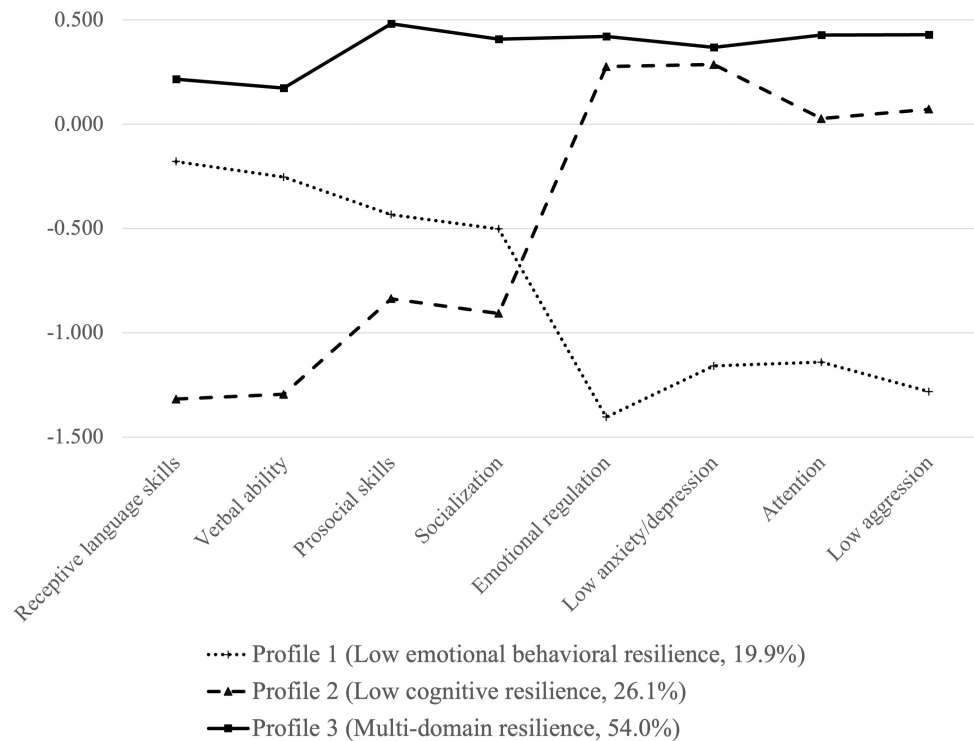
Table 3 shows the fit indices for all LPA models estimated at Time 1 and Time 2. In addition to fit indices, we considered the interpretability of the profiles as well as conceptual and theoretical reasoning. At Time 1, there were substantial decreases in AIC, BIC, and ABIC values between the 2-profile model and the 3-profile model, after which decreases in these values were relatively minor. Further, the LMR- and VLMR-LRT results were not significant starting with the four-profile model, suggesting the 3-class model as the best-fitting model. The 3-profile model was selected as the final model at Time 1 based on a consideration of interpretability, previous findings, and fit indices. At Time 2, AIC, BIC, and ABIC values continued to decrease as the number of profiles increased, yet the LMR- and VLMR-LRT results were only significant for the 2-profile model, suggesting the 2-profile model as the optimal model. The third profile newly added in the 3-profile model was not qualitatively distinct from a profile in the 2-profile model that was characterized as above-average scores on all indicators. This new (third) profile essentially showed the same pattern, with the only difference being the slightly lesser degree of resilience (i.e., lower mean scores) across the indicators. When compared to the 3 profiles at Time 1, the profile in which children showed low cognitive resilience was dropped in the 2-profile model at Time 2. Based on the LMR results, theoretical meaning, interpretability of each profile, and previous findings, we selected the 2-profile model as the final model at Time 2.

Figure 1 visually represents the three-profile resilience model at Time 1. The low emotional behavioral resilience profile (19.9%) was characterized by the lowest scores

TABLE 3 Fit information for LPA models at two time points.

Time	Log-likelihood	AIC	BIC	ABIC	LMR-LRT	VLMR-LRT	BLRT
					(p-value)		
Time 1							
2-profile	-5582.354	11,214.707	11,323.216	11,243.853	<.001	<.001	<.001
3-profile	-5342.096	10,752.193	10,899.765	10,791.831	0.011	0.010	<.001
4-profile	-5218.701	10,523.403	10,710.038	10,573.533	0.114	0.111	<.001
5-profile	-5144.035	10,392.070	10,617.768	10,452.693	0.213	0.208	<.001
Time 2							
2-profile	-4393.615	8837.230	8941.885	8862.537	<.001	<.001	<.001
3-profile	-4240.069	8548.138	8690.469	8582.555	0.138	0.135	<.001
4-profile	-4133.328	8352.656	8532.663	8396.184	0.670	0.666	<.001
5-profile	-4067.550	8239.101	8456.784	8291.739	0.117	0.116	<.001

Abbreviations: ABIC, sample size-adjusted Bayesian information criterion; AIC, Akaike information criterion; BIC, Bayesian information criterion; BLRT, bootstrap likelihood ratio test; LMR-LRT, Lo-Mendell-Rubin likelihood ratio test; LPA, latent profile analysis; VLMR-LRT, Vuong-Lo-Mendell-Rubin likelihood ratio test.

**FIGURE 1** Indicator mean plot for the three-profile resilience model at Time 1.

on the indicators of emotional behavioral resilience and moderate cognitive and social resilience levels. The low cognitive resilience profile (26.1%) was characterized by the lowest mean scores on the indicators of cognitive resilience. The multidomain resilience profile (54.0%) was distinguished by its above-average, highest mean scores across all eight resilience indicators. The two-profile model at Time 2 (Figure 2) included the low emotional behavioral resilience profile (18.9%) and the multidomain

resilience profile (81.1%). Similar to the low emotional behavioral resilience profile at Time 1, the low emotional behavioral resilience profile at Time 2 had the lowest means on the indicators of emotional behavioral resilience and moderate scores on the indicators of cognitive and social resilience. The multidomain resilience at Time 2 again mirrored the multidomain resilience profile at Time 1, in that it had the highest mean scores on all indicators of resilience across multiple domains of functioning.

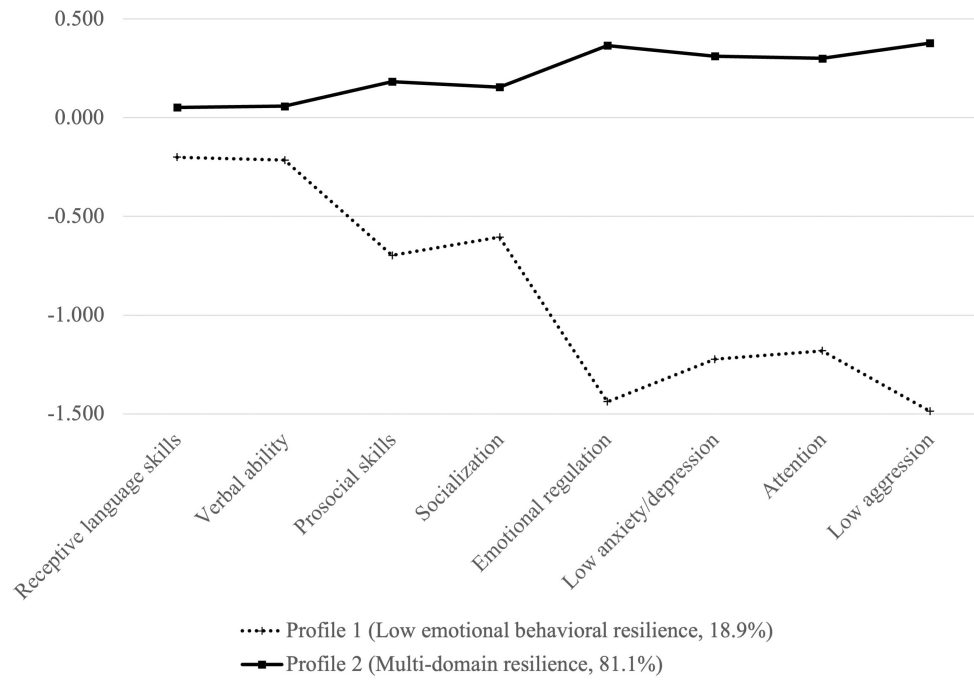


FIGURE 2 Indicator mean plot for the two-profile resilience model at Time 2.

Transitions in resilience profiles

When examining the transition probabilities from latent profiles at Time 1 to latent profiles at Time 2 (see Table S1), 66.1% of the children in the low emotional behavioral resilience group at Time 1 stayed in the low emotional behavioral resilience group at Time 2, and the remaining 33.9% of the children transitioned into the multidomain resilience group at Time 2. Next, 17.1% of the children who were classified into the low cognitive resilience group at Time 1 moved to the low emotional behavioral resilience group at Time 2, and the remaining 82.9% of the children transitioned into the multidomain resilience group at Time 2. Finally, most of the children (95.7%) who belonged to the multidomain resilience group at Time 1 continued to be in the multidomain resilience group at Time 2. Only 4.3% of the children in the multidomain resilience group at Time 1 moved to the low emotional behavioral resilience group at Time 2.

Caregiver factors in predicting the patterns and transitions in resilience

Table 4 shows the covariate effects on latent profile membership at Time 1. Children whose caregivers had mental health problems were more likely to belong to the low emotional behavioral resilience group, compared to the multidomain resilience group ($b=0.709$, $OR=2.031$, $p=.040$). Conversely, children with higher levels of caregiver cognitive stimulation were significantly less likely to belong to the low emotional behavioral resilience group compared to the multidomain resilience group

($b=-0.280$, $OR=0.756$, $p<.001$). When the comparison group was the low cognitive resilience group, again, caregiver mental health problems were positively associated with a higher likelihood of children belonging to the low cognitive resilience group at Time 1 ($b=0.966$, $OR=2.627$, $p=.033$). Higher levels of caregiver cognitive stimulation ($b=-0.571$, $OR=0.565$, $p<.001$), older age ($b=-2.993$, $OR=0.050$, $p<.001$), and being a female ($b=-0.947$, $OR=0.388$, $p=.017$) were all associated with a lower likelihood of children belonging to the low cognitive resilience group.

The results of the interaction model suggested that the effects of caregiver warmth on class membership at Time 1 significantly varied for boys and girls. For boys, there was no significant association between caregiver warmth and membership in the low emotional behavioral resilience group. Conversely, for girls, when caregiver warmth increased by 1 unit, the odds of being classified into the low emotional behavioral resilience group decreased by 0.52 times ($b=-0.652$, $OR=0.521$, $p=.022$). That is, for girls, higher levels of caregiver warmth served as a protective factor in being classified into the low emotional behavioral resilience group. Figure 3 shows the different effects of caregiver warmth on class membership in the low emotional behavioral resilience group, compared to the multidomain resilience group.

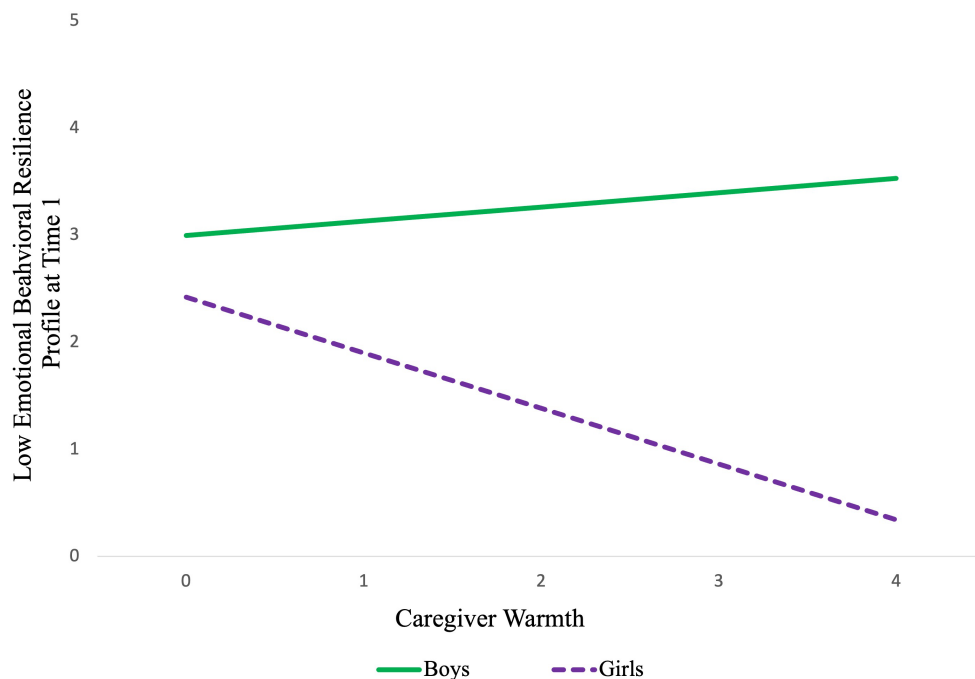
Table 5 shows the effects of caregiver cognitive stimulation and other covariates on transition probabilities. Regardless of the profile at Time 1, children with higher levels of caregiver cognitive stimulation were significantly less likely to transition to the low emotional behavioral resilience group than to the multidomain resilience group at Time 2 ($b=-0.320$, $OR=0.726$, $p=.042$).

TABLE 4 Effects of covariates on latent profile membership at Time 1 ($N=486$).

	Main effect model				Interaction effect model			
	Reference group: Multidomain resilience (54.0%)							
	Low emotional behavioral resilience (19.9%)		Low cognitive resilience (26.1%)		Low emotional behavioral resilience (19.9%)		Low cognitive resilience (26.1%)	
	Logit	OR	Logit	OR	Logit	OR	Logit	OR
Caregiver mental health problems	0.709*	2.031	0.966*	2.627	0.027	1.028	-1.17	0.311
Caregiver warmth	-0.127	0.881	0.035	1.036	0.133	1.142	0.134	1.143
Caregiver cognitive stimulation	-0.280**	0.756	-0.571***	0.565	-0.241*	0.786	-0.514**	0.598
Child age	-0.433	0.648	-2.993***	0.050	-0.513	0.599	-3.04***	0.048
Child sex	-0.555	0.574	-0.947*	0.388	-0.577	0.561	-1.247*	0.287
Time in out-of-home care	-0.028	0.973	-0.062	0.940	-0.035	0.966	-0.056	0.946
Caregiver education level	0.267	1.306	-1.001	0.367	0.427	1.532	-0.95	0.387
Caregiver mental health services	0.142	1.153	-0.589	0.555	0.246	1.279	-0.491	0.612
Household poverty level	-0.059	0.943	0.276	1.319	-0.009	0.991	0.299	1.348
Co-occurrence of maltreatment	0.083	1.087	-0.600	0.549	0.087	1.091	-0.599	0.549
Child sex × Caregiver mental health problems	—	—	—	—	0.523	1.687	1.498	4.474
Child sex × Caregiver warmth	—	—	—	—	-0.652*	0.521	-0.286	0.751
Child sex × Caregiver cognitive stimulation	—	—	—	—	-0.147	0.863	-0.197	0.821

Note: OR, odds ratio; * $p < .05$, ** $p < .01$, *** $p < .001$.

Statistically significant results are bolded.

**FIGURE 3** Interaction effects of caregiver warmth on class membership at Time 1 for boys and girls.

Put differently, higher levels of caregiver cognitive stimulation were associated with a greater likelihood of children transitioning to the multidomain resilience group over time. No other covariates had significant effects on

transition probabilities. In the interaction model, there were no significant interaction effects between child gender and caregiver factors on predicting transition probabilities.

TABLE 5 Effects of covariates on transition probabilities ($N=486$).

	Main effect model		Interaction effect model	
	Transition reference group: Multidomain resilience			
	Low emotional behavioral resilience (18.9%)		Low emotional behavioral resilience (18.9%)	
	Logit	OR	Logit	OR
Caregiver mental health problems	0.033	1.033	0.360	1.433
Caregiver warmth	0.142	1.153	0.111	1.117
Caregiver cognitive stimulation	-0.320*	0.726	-0.282	0.754
Child age	-0.385	0.680	-0.350	0.705
Child sex	0.059	1.060	0.085	1.089
Time in out-of-home care	0.037	1.037	0.040	1.040
Caregiver education level	-0.740	0.477	-0.772	0.462
Caregiver mental health services	0.667	1.948	0.246	1.279
Household poverty level	0.048	1.050	0.048	1.049
Co-occurrence of maltreatment	0.232	1.261	0.220	1.246
Child sex × Caregiver mental health problems	—	—	-0.244	0.783
Child sex × Caregiver warmth	—	—	0.066	1.068
Child sex × Caregiver cognitive stimulation	—	—	-0.064	0.938

Note: OR, odds ratio; * $p < .05$.

Statistically significant results are bolded.

DISCUSSION

This study aimed to examine the profiles and transitions in resilience during early childhood following child maltreatment and to determine how caregiver risk and protective factors predict the initial and transition patterns in resilience profiles. We identified meaningful resilience profiles at each assessment point (Time 1: low emotional behavioral resilience, low cognitive resilience, multidomain resilience; Time 2: low emotional behavioral resilience, multidomain resilience) by applying person-centered analytic approaches to a nationally representative sample of children involved with the child welfare system. Notably, the low cognitive resilience profile found in Time 1 did not emerge in Time 2. This finding is consistent with Green et al. (2021)'s study in which three resilience profiles emerged in early childhood (Time 1), yet the “cognitively vulnerable” profile from Time 1 disappeared in middle childhood (Time 2) among children involved with the Australian child welfare system. Our finding is also in line with prior research that suggested that children with other forms of early adversity (e.g., pre-term birth, institutional care) can “catch up” linguistically and cognitively as they age, especially if they are in an improved situation (Luu et al., 2011; Van IJzendoorn & Juffer, 2006). Cognitive resilience scores in our sample showed that children's receptive and expressive language standard scores at Time 1 were below the normal range (verbal ability) or at the lower end of the normal range (receptive language skills) compared to the general population, but their scores were within

the normal range by the time they enter kindergarten at Time 2.

Overall, the number of resilience profiles identified in the present study is smaller than the number of resilience profiles identified in prior research. Some prior studies that employed a person-centered approach to examine resilience and adaptation among individuals with a history of child maltreatment or other adversities found four profiles—multifaceted competence, multi-problem, externalizing problems, and work/school impairment (Russotti et al., 2020); or maladaptive, resilient, internally resilient, and externally resilient (Yates & Grey, 2012). Other studies have listed five, such as consistent maladaptation, consistent resilience, posttraumatic stress problems, school maladaptation family protection, and low socialization skills (Martinez-Torteya et al., 2017). The difference may have come about because we focused on resilience during early childhood (ages 3–5) whereas other studies focused on later developmental stages, including adolescence (Martinez-Torteya et al., 2017) and emerging adulthood (Russotti et al., 2020; Yates & Grey, 2012). For example, certain resilience profiles identified in prior research with older populations, such as “work/school impairment,” would be not relevant for young children. Nonetheless, the diverse profiles identified in this study support the notion that resilience is a multifaceted construct and that the structure and development of resilience across different areas of functioning can vary (Luthar et al., 2015; Luthar & Eisenberg, 2017).

A novel contribution of the present study is our examination of profile change and stability in resilience

over time. Little research has investigated the change in resilience profiles over time, especially among young children involved with the child welfare system. In terms of stability, we found that the overall structure of the profile stayed relatively similar over the 18-month study period, given that the low emotional behavioral resilience profile and the multidomain resilience profile were observed at both time points. One notable difference in resilience profiles at the two time points was that the low cognitive resilience profile, which contained a little over one-quarter of the children (26.1%) at Time 1, disappeared at Time 2. It should be noted that we primarily used measures of language development as indicators of cognitive resilience. Thus, the finding may suggest that children who show lower levels of language functioning in the preschool period (ages 3–4) generally overcome difficulties in language functioning and develop language competence by the time they enter kindergarten. Additionally, there were differences in the size and composition of profiles across the time points. A little over half of the children (54%) had the multidomain resilience profile at Time 1, but more than 80% of the children had this profile at Time 2, showing a sharp increase in the number of children displaying the optimal resilience pattern.

To understand the extent to which children remain in their initial resilience profile group or move into a different profile group at Time 2, we examined the transition probabilities. Some children transitioned from one profile group to another while others stayed in the same profile group over time. Specifically, approximately 64.8% of the children (the stayers) maintained the same resilience profiles over time, while the remaining 35.2% (the movers) moved into a new resilience profile group across the time points in the study.

The study results revealed that the majority of the children maintained their membership in the optimal resilience group or transitioned from a poorer resilience profile to a better resilience profile over time. About 82.9% of the children in the low cognitive resilience group at Time 1 moved into the multidomain resilience group at Time 2, with less than 20% of the children moving into the low emotional behavioral resilience group. Another promising and exciting finding was that almost 96% of the children in the multidomain resilience group at Time 1 maintained their membership in that group at Time 2, with only a handful of children (under 5%) moving into the low emotional behavioral resilience group. These findings are consistent with prior studies that found that children's resilience increases over time as they age (Dubowitz et al., 2016; Yoon, Sattler, et al., 2021).

Children in the low emotional behavioral resilience group at Time 1 showed a somewhat different transition trend. In contrast to about 83% of the children in the low cognitive resilience group at Time 1 who transitioned into the multidomain resilience group, only about 34% of the children in the low emotional behavioral resilience

group at Time 1 moved into this desirable profile group at Time 2. That is, two-thirds (66.1%) remained in the low emotional behavioral resilience group at Time 2. These findings corroborate prior research that indicates chronic emotional and behavioral challenges, including internalizing, externalizing, and posttraumatic stress symptoms, experienced by some children who have experienced maltreatment (Godinet et al., 2014; Kim & Cicchetti, 2003). Once a child experiences emotional and behavioral difficulties, these might be particularly difficult to resolve in a relatively short period of time.

Regarding the relations between caregiver factors and resilience profiles, we found that caregiver mental health problems were associated with membership in the low emotional and behavioral resilience group and the low cognitive resilience group, compared to the multidomain resilience group at Time 1. These findings validate prior research that indicated caregiver well-being as a salient predictor of children's positive adaptation (Luthar & Eisenberg, 2017. National Academies of Sciences, Engineering, and Medicine, 2019). Caregiver mental health problems, such as depression, may negatively affect parenting behavior and the quality of caregiver-child relationships (Middleton et al., 2009; Vreeland et al., 2019). Building upon attachment theory (Bowlby, 1969) and the intergenerational transmission of depression literature (Goodman, 2020), caregivers' insensitive parenting and poor caregiver-child relationships might lead to children's low emotional and behavioral resilience. Similarly, caregiver depression might impede children's language and cognitive development in early childhood via caregivers' compromised ability to provide sensitive and responsive care that supports cognitive growth (Liu et al., 2017).

Another important finding was that children with higher levels of caregiver cognitive stimulation were more likely to be in the multidomain resilience group initially (at Time 1) and remain in the group over time. Essentially, having caregivers who provide a language-rich home environment and engage children in cognitively stimulating activities such as reading, storytelling, singing nursery rhymes, or playing letter and number games were found to be important in ensuring continued optimal resilient functioning for young children with a history of maltreatment. Our findings support and extend the past work that suggested the positive link between caregiver cognitive stimulation and better child outcomes (Cabrera et al., 2020; Lurie et al., 2021), demonstrating its enduring effects on resilience over time. The link between caregiver cognitive stimulation and persistent multidomain resilience observed in this study is noteworthy as it suggests that the positive impact of early cognitive stimulation may go beyond enhanced cognitive abilities and extend to competence across broad and diverse aspects of resilience.

Lastly, we found that caregiver warmth may be differently associated with resilience for boys and girls.

Study results suggested that caregiver warmth serves as a key protective factor for resilience for girls, although such protective effects did not seem to last or help girls transition into a more optimal resilience profile over time. Our findings are in line with prior studies that found that the positive effects of caregiver warmth were stronger for girls versus boys (Linver & Silverberg, 1997; Stright & Yeo, 2014). It might be that girls are more likely than boys to benefit from emotional support obtained through their close relationships with warm and caring caregivers, because girls generally use social support and emotional support as their main coping strategies while boys tend to use other copings strategies, such as avoidant coping (Eschenbeck et al., 2007). Building on this study's preliminary evidence of gender moderation of the link between caregiver warmth and resilience, further investigation is warranted to unravel the complex associations among child gender, caregiver factors, and early childhood resilience in the context of maltreatment.

Strengths and limitations

The study had several limitations. First, we focused on children in the child welfare system, which limits the generalizability of the study findings. Second, due to data availability constraints, we could not consider other domains of resilience, such as physical and spiritual resilience. Future research may benefit from more comprehensively assessing broader domains of resilience. Third, although we conceptualized resilience as positive adaptation following exposure to early adversity, the caregiver ratings of the child's emotional and behavioral functioning might also be capturing preexisting traits or temperament characteristics that were in place before the child's exposure to adversity. Finally, there were multiple limitations concerning study measures. Despite our focus on resilience and positive adaptation, we used psychopathology measures (i.e., the CBCL) to examine emotional and behavioral resilience. Due to the nature of secondary data analysis, we were limited by the original survey measures and data available in the dataset. Future research should utilize measures of positive functioning and adaptation to assess resilience in emotional and behavioral domains. Relatedly, only 2 out of the 8 indicators of resilience were based on direct child assessment and the remaining 6 were based on caregivers' reports. Caregivers' adjustment and functioning may have influenced the ways in which they viewed their children and responded to the questions. For instance, the large number of children who were in the multidomain resilience group both at Time 1 and Time 2 may reflect that caregivers who were well-functioning at Time 1 were also well adjusted at Time 2, and this positive adjustment (e.g., no or less depressive symptoms) may have led them to positively rate their children. Another measurement-related

limitation is that the HOME-SF cognitive stimulation scale included items (e.g., the number of magazines the family gets regularly) that reflect material resources and may be less applicable in the digital era. Future research should include other ways in which families are providing cognitive stimulation to their children.

Despite these limitations, the current study has significant strengths. The study's focus on early childhood is important, given that during this period, children develop the fundamental basis of competence that is essential to an individual's healthy and resilient development over the life course. Further, using a person-centered analytical approach in modeling resilience is a strength. Despite increasing recognition of resilience as a multifaceted construct, prior research has struggled with methodological limitations in effectively capturing the multidimensional nature of resilience. Finally, the use of longitudinal data and a relevant analytical technique (LTA) to assess movement in resilience profiles sheds light on our limited understanding of the fluidity of resilience in early childhood and changing patterns of resilience over time.

Implications

The study findings have important implications for future research and practice. For instance, this study highlights LTA as a promising longitudinal, model-based, person-centered analytic method for investigating changes in resilience profiles over time. Our findings illustrate both the stability and the mutability of resilience by demonstrating both “movers” (those who moved into a different resilience profile group across assessment points) and “stayers” (those who remained in the same resilience profile group). Further research with more time points and a longer observation period is warranted to validate and extend the current study's findings.

Different transition patterns of resilience profiles observed in the study provide insightful information for practice. More than half of the children in our study initially belonged to the multidomain resilience group, with many of them maintaining their membership in this group over 18 months. The findings suggest that practitioners working with children with a history of maltreatment should strive to identify and capitalize on the strengths, assets, and resources children already possess and help them maintain resilience. At the same time, about two-thirds of the children who were initially in the low emotional behavioral resilience profile remained in the same profile group over time. These findings point to the importance of identifying behavioral health service needs among young children in the child welfare system and delivering targeted, early intervention programs for those with emotional and behavioral challenges.

Finally, our findings point to the critical need for the promotion of caregiver mental health and cognitive stimulation to effectively foster resilience building among young children involved with the child welfare system. At the macro level, more funding and resources should be allocated to ensure that all children, including those who come to the attention of the child welfare system, have equitable access to quality early learning environments and opportunities. At the practice level, efforts to promote resilience in children with a history of maltreatment should not only focus on children's needs but also recognize and address the mental health needs of caregivers involved with the child welfare system. Additionally, it might be important for parenting programs targeting this population to incorporate modules that teach parents how to engage their children in cognitively stimulating activities at home, to facilitate their children's resilient development. For example, home visiting programs for high-risk families with young children could focus on helping parents create more stimulating home environments for their children. Early childhood education and care, including schools, could also play a vital role and help supplement low stimulation at home.

ACKNOWLEDGMENTS

This document includes data from the National Survey of Child and Adolescent Well-Being that was developed under contract with the Administration on Children, Youth, and Families, US Department of Health and Human Services. The data were provided by the National Data Archive on Child Abuse and Neglect. The materials necessary to attempt to replicate the findings presented here are not publicly accessible. The analytic code necessary to reproduce the analyses presented in this paper is publicly accessible. Code is available from the first author. The analyses presented here were not preregistered. Research reported in this publication was supported by the Eunice Kennedy Shriver National Institute of Child Health and Human Development of the National Institutes of Health under award number R03HD100603. Dr. Yoon was supported by the National Institute of Drug Abuse through K01DA050778 (Yoon, PI). The content is solely the responsibility of the authors and does not necessarily represent the official views of the National Institutes of Health.

DATA AVAILABILITY STATEMENT

The data necessary to reproduce the analyses presented here are not publicly accessible.

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SUPPORTING INFORMATION

Additional supporting information can be found online in the Supporting Information section at the end of this article.

How to cite this article: Yoon, S., Yang, J., Pei, F., Benavides, J. L., Bayar, Ö., Logan, J. A., & Hamby, S. (2023). Can resilience change over time? Patterns and transitions in resilience among young children involved with the child welfare system. *Child Development, 00*, 1–17. <https://doi.org/10.1111/cdev.13980>