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Child internalizing symptoms during the COVID-19 pandemic among maltreating and non-maltreating families: Examining the effects of family resources and the Reminiscing and Emotion Training intervention

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ABSTRACT

Background: The effects of the COVID-19 pandemic on child functioning have been especially pronounced among low-income families. Protective factors, including sensitive reminiscing and sufficient family resources, may reduce the negative effects of the pandemic on child adjustment.

Objective: The current study investigated how family resources during the pandemic, race, maltreatment, and pre-pandemic involvement in an emotion socialization intervention (M years ago = 4.37, SD = 1.36) were associated with child internalizing symptoms during the pandemic.

Participants and setting: The study utilized longitudinal data following 137 maltreating and low-income nonmaltreating mother–child dyads (M age = 9.08, SD = 1.88; 54.7% Male).

Methods: Mother–child dyads engaged in a randomized controlled trial of the Reminiscing and Emotion Training (RET; Valentino et al., 2019) intervention prior to the pandemic. Dyads discussed shared, past emotional experiences, and during the pandemic, mothers reported on their family resources and their child’s internalizing symptoms. A path analysis examined the effects of family resources, race, maltreatment, and the RET intervention on child internalizing symptoms.

Results: Family resources during the pandemic were significantly and inversely associated with child internalizing symptoms, b = −0.07, SE = 0.02, p < .01. There was a significant indirect effect of RET on child internalizing symptoms through sensitive reminiscing and a prior assessment of child maladjustment (95% CI [−0.294, −0.001]).

Conclusions: These findings suggest adequate family resources and sensitive maternal emotion socialization may be protective against child internalizing symptoms during the pandemic.

1. Introduction

The COVID-19 pandemic has caused widespread occupational, personal, and educational disruptions for families. As of July 2021, the disease has claimed the lives of over 600,000 Americans, and 33.6 million Americans are estimated to have been infected (CDC, 2021a). In addition, individuals have reported changes to their finances, employment, health, school, and childcare routines (Parker et al., 2020). Indeed, evidence suggests there is a pandemic-related increase in internalizing symptoms among children (Racine et al., 2020); however, little is known about risk and protective mechanisms explaining this increase. Internalizing symptoms are particularly

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salient to examine in the context of a global pandemic characterized by fear, worry and uncertainty. It is especially important to examine potential risk and protective processes for internalizing symptoms among vulnerable children, such as racial minorities as well as those with maltreatment histories, as they are at an elevated risk for COVID-19 and psychopathology, respectively (CDC, 2021b; Cicchetti & Toth, 2016). In the current study, we utilized longitudinal data following a racially diverse sample of mother–child dyads with and without histories of child maltreatment who had participated in a randomized controlled trial (RCT) of the Reminiscing and Emotion Training (RET; Valentino et al., 2019) intervention prior to the onset of the pandemic. RET was designed to improve maternal emotion socialization behaviors as a transdiagnostic mechanism hypothesized to support child emotion regulation and emotional adjustment. As such, the present study provides a unique opportunity to examine how important risk and protective factors for child internalizing symptoms—specifically, family resources, race, maltreatment, and pre-pandemic involvement in a relational, emotion socialization-based intervention—predicted child internalizing symptoms during the pandemic over and above relevant covariates measured prior to the pandemic.

1.1. Family resources and the COVID-19 pandemic

Research on the COVID-19 pandemic, as well as research on other types of disasters, indicates that family resources (i.e., the concrete financial and psychosocial resources available to a family) may be important for understanding child internalizing symptoms (Lawson et al., 2020; Norris et al., 2002). Indeed, Prime et al. (2020) presented a conceptual framework for understanding risk and resilience processes for family well-being during the pandemic that highlighted the importance of family resources. This framework proposed that child adjustment may be influenced by numerous pandemic-related economic and social stressors facing families (e.g., job loss, financial insecurity, social distancing, confinement), as well as pre-pandemic vulnerabilities, such as prior economic hardship, racism and marginalization, past mental health functioning, family relational dysfunction, and trauma history.

Considering the financial component of family resources, Prime et al. (2020) drew upon the Family Stress Model (FSM; Conger et al., 2010; Masarik & Conger, 2017), an important theoretical framework for understanding the ways in which financial resources can impact psychological functioning. Specifically, the FSM theorizes that economic hardships generate economic pressures (e.g., difficulties paying bills), and these economic pressures mediate associations between hardship and negative outcomes including parental psychological distress, disrupted parenting, parental conflict, and child maladjustment (Scaramella et al., 2008). Accordingly, it is unsurprising that the negative economic effects of the pandemic appear to have impacted families, perhaps most consequentially, low-income families. Low-income families are typically less prepared to handle an unexpected loss of income; only 23% of low-income families report that they have savings to cover three months of expenses, whereas 50 to 75% of middle- and high-income families report such savings (Parker et al., 2020). Given the unequal economic impact of the pandemic, and the cascading effects of inadequate resources (Conger et al., 2010), it is especially important to examine the role of family resources on child internalizing symptoms among low-income families.

While finances are undoubtedly a valuable and informative metric of family resources, expanding the definition of family resources to include personal resources and social support may provide more comprehensive insight into family functioning during the pandemic (Van Horn et al., 2001). Indeed, research indicates that children in families facing material (e.g., household income loss) and non-material pandemic-related hardships (e.g., caregiving burden) show elevated internalizing symptoms, and that the families facing the most hardships report the poorest child functioning (Gassman-Pines et al., 2020). This suggests that cumulative hardships, including psychosocial difficulties, may also have cascading effects through the family system (Conger et al., 2010). As such, investigating the impact of pandemic-related family resources, conceptualized as both concrete financial and psychosocial resources, on child internalizing symptoms among already vulnerable families is a goal of the current study.

Psychosocial resources often include higher-order resources, including things such as money to save and someone to talk to, and may be especially salient in predicting child outcomes in part through their influence on the family context (Van Horn et al., 2001). Consistent with Prime et al.’s (2020) model emphasizing the importance of psychosocial resources and pre-pandemic vulnerabilities, research suggests families reporting the worst child outcomes during the pandemic are also the families with the highest caregiver or parenting stress (Russell et al., 2020). Thus, it appears that reduced family psychosocial resources in the context of the pandemic may be contributing to elevated internalizing symptoms in children. Conversely, the presence of psychosocial resources during the pandemic may be protective. In response to the numerous disruptions to family life, parents have reported a number of strategies to manage and reduce stress, including engaging in family activities together and keeping in touch with friends (Adams et al., 2021). Thus, psychosocial resources appear important in mitigating the impact of acute stressors during the pandemic on family functioning. Supporting this, Brown et al. (2020) found that parental social support was associated with reduced child abuse potential. Thus, concrete financial and psychosocial family resources, in conjunction with pre-pandemic family vulnerabilities proposed by Prime et al. (2020) such as race, maltreatment, and child maladjustment, may be key to understanding child internalizing symptoms during the pandemic.

1.2. COVID-19 and race

The COVID-19 pandemic has also disproportionately impacted racial and ethnic minority families (our use of racial and ethnic minority groups refers to individuals whose race and/or ethnicity is in the minority relative to the racial and ethnic makeup of the United States). Indeed, the aforementioned resource disparities are especially distinct among mothers and racial and ethnic minority
groups, with these groups reporting more difficulty paying bills and higher rates of pandemic-related job loss (Parker et al., 2020). Moreover, COVID-19 hospitalization rates among non-Hispanic Black and Latinx people have been approximately four times higher than their non-Hispanic White counterparts (CDC, 2021b). The unequal impact of the pandemic on communities of color in the United States is due to a number of longstanding and systemic health and social inequities, which include but are not limited to discrimination, barriers to accessing healthcare, living in multi-generational, crowded, or insecure housing conditions, and being employed in essential work settings (Tai et al., 2020). Given this, it is important to understand how racial and ethnic minority families are adjusting to the pandemic.

1.3. COVID-19 adjustment among maltreating families

In addition to family resources during the pandemic, and in line with Prime et al.’s (2020) model emphasizing pre-pandemic risk factors, pre-pandemic maltreatment may be an important predictor of child internalizing symptoms during the pandemic. Research suggests that children exposed to maltreatment may have worse mental health outcomes during the pandemic, with posttraumatic stress symptoms and anxiety following COVID-19 exposure being the highest among adolescents with a maltreatment history as compared to those without a maltreatment history (Guo et al., 2020). Still, most research on the pandemic and maltreatment has focused on the prediction of child maltreatment potential (Brown et al., 2020; Lawson et al., 2020) rather than the well-being of children with documented histories of child maltreatment. No research to our knowledge has examined predictors of child internalizing symptoms during the pandemic among families with maltreatment histories. However, informed by longitudinal research on exposure to early life stress that found that adolescents with exposure to early life stress (e.g., experienced a severe injury, divorce) had elevated depressive symptoms during the pandemic (Gotlib et al., 2021), maltreatment, as an early life stressor, may be a salient predictor of child internalizing symptoms during the pandemic.

Given the elevated risk for internalizing symptoms among children with maltreatment histories (Cicchetti & Toth, 2016; McLaughlin et al., 2010), examining family-level risk and protective factors for pandemic maladjustment among maltreating families is important. One central parenting process associated with child well-being is parental emotion socialization, defined as the ways in which parents respond to and discuss children’s emotions and guide their children’s emotional expression (Eisenberg, 2020; Eisenberg et al., 1998). Prior research utilizing the present study’s sample suggests maltreating parents struggle with supportive emotion socialization behaviors, and these difficulties have consequences for children’s emotion regulation development (Speidel et al., 2020). In contrast, supportive parental emotion socialization practices, which include behaviors such as encouraging children to discuss their emotions, validating children’s emotions, helping children discuss their emotions, and providing opportunities to discuss how to cope with emotions (Morris et al., 2007), are linked with a number of positive child outcomes. For example, Cunningham et al. (2009) found that maternal caregivers’ emotion socialization predicted boys’ internalizing behaviors and girls’ social skills through enhanced emotional understanding. More recently, research found that parental emotion coaching of their children’s negative emotions moderated the association between family-level COVID-19 stress and child internalizing symptoms during the pandemic (Cohodes et al., 2021). Specifically, Cohodes et al. (2021) found that emotion coaching was related to less child internalizing symptoms, even in the context of higher family stress. Accordingly, positive parental emotion socialization behaviors may be an important process to help children cope with their emotions and may be protective against maltreated children’s internalizing symptoms during the pandemic.

Positive emotion socialization behavior includes the manner through which parents reminisce with their children about past emotional events (Valentino et al., 2021). Reminiscing, defined as collaborative and elaborative discussions of children’s past emotional experiences, is linked with a number of important child socioemotional and cognitive outcomes (Fivush et al., 2006). Among maltreating families, mothers who have perpetrated maltreatment display a number of difficulties reminiscing with their children. These difficulties, which include low levels of maternal sensitive guidance (i.e., the extent to which a mother is engaged, coherent, and emotionally supportive; Koren-Karie et al., 2003), have been shown in research using the present study’s sample to predict child maladjustment (Valentino et al., 2021). However, research suggests maternal sensitive guidance among maltreating mothers is malleable and can be improved following training (Valentino et al., 2019).

The Reminiscing and Emotion Training (RET; Valentino et al., 2019) intervention was developed to reduce the negative child outcomes associated with maltreatment through improvements to maternal sensitivity and engagement during reminiscing. Prior evaluations of the RET intervention with the current sample have demonstrated that RET-related improvements in maternal sensitive guidance were associated, in turn, with improvements in child self-regulation at six months following the intervention (Speidel et al., 2020) and lower child maladjustment one year following the intervention (Valentino et al., 2021). In the current study, we were interested in evaluating the long-term effects of RET approximately four years after participation in the intervention by examining the role of post-intervention emotion socialization behavior in predicting child internalizing symptoms during the pandemic.

1.4. Current study

The present study examined predictors of child internalizing symptoms among a sample of racially diverse maltreating and non-maltreating dyads who were involved in a longitudinal RCT of the RET intervention (Valentino et al., 2019) prior to the pandemic. Approximately half of the maltreating dyads were randomized to receive an intervention designed to improve maternal sensitive
guidance during reminiscing, and the other half were randomized to an active control condition where families received assistance accessing resources. Nonmaltreating dyads were included in an additional control condition.

We first hypothesized that fewer resources during the pandemic would be associated with elevated child internalizing symptoms. Second, as racial and ethnic minority families have been disproportionately impacted by the pandemic, we hypothesized that Black/Latinx/Multi-racial children would report elevated internalizing symptoms compared to White children. Finally, our third set of hypotheses sought to extend prior research with this sample which found that maternal sensitive guidance mediated the effects of RET on reduced child maladjustment one year later, whereas poor maternal sensitive guidance mediated the effects of maltreatment on higher child maladjustment (Valentino et al., 2021). Accordingly, we hypothesized that involvement in the intervention would be related to fewer child internalizing symptoms during the pandemic through post-intervention maternal sensitive guidance and a prior assessment of child maladjustment, and that maltreatment would be associated with greater child internalizing symptoms during the pandemic through maternal sensitive guidance and child maladjustment.

2. Method

2.1. Participants

Participants in the current study were drawn from a larger, longitudinal intervention study examining the long-term effects of RET (Valentino et al., 2021), a brief, relational intervention that targeted mother–child reminiscing. The full sample included 165 maltreating and 83 nonmaltreating mothers and their children, aged 3- to 6-years-old ($M = 4.90$, $SD = 1.14$) at enrollment which was rolling between 2013 and 2017. Maltreating dyads were recruited from the Department of Child Services (DCS) through flyers presented by DCS Family Case Workers. To be considered for inclusion, dyads needed to be primarily English speaking, the child needed to be between 3- and 6-years old, and maltreating dyads needed to have at least one substantiated instance of maltreatment with the mother named as the perpetrator. Nonmaltreating dyads had no prior involvement with DCS and were recruited from community organizations such as the Special Supplemental Program for Women, Infants, and Children office and Head Start.

After the initial enrollment data collection (T1), maltreating dyads were randomized to either the RET intervention condition (RET; $n = 83$) or a Community Standard control condition (CS; $n = 82$). Nonmaltreating dyads were assigned as Nonmaltreating Controls (NC; $n = 83$) and received no intervention. All dyads participated in four waves of data collection over the course of one year including their T1 data collection, which occurred prior to randomization into intervention conditions. The current study uses data from T1, the six-month follow-up after the intervention (T2), and the one-year follow-up after the intervention (T3).

During May and June of 2020, mothers involved in this study were invited to participate in an additional mid-pandemic data collection (T4) approximately one month following the state’s stay at home order ($M = 24.40$, $SD = 11.98$). Average time between T3 and T4 was 3.31 years ($SD = 1.40$). One hundred and forty-three dyads completed the COVID-19 pandemic data collection. Of this sample, two dyads were dropped from analyses because of limited maternal receptive language skills (i.e., a score of less than two standard deviations ($SD = 11.75$) below the sample mean of 85.57). Previous investigations (e.g., Edler et al., 2021) have used this standard to minimize the influence of low maternal language skill on reminiscing because low language scores (e.g., a score of less than 60) may be indicative of intellectual disabilities (Bell et al., 2001). In addition, four nonmaltreating community families had

### Table 1

Sample characteristics by maltreatment and intervention group.

| Variable                              | Total Sample ($N = 137$) | Nonmaltreating ($NC, n = 53$) | Maltreating ($CS, n = 44$) | Maltreating ($RET, n = 40$) | F     | p    |
|---------------------------------------|--------------------------|--------------------------------|---------------------------|-----------------------------|-------|------|
| Pre-pandemic variables                |                          |                                |                           |                             |       |      |
| T1 Family Resources ($n = 118$)       | 113.39 (18.82)           | 117.67 (19.08)                 | 109.50 (18.71)            | 111.94 (17.93)              | 2.15  | 0.12 |
| T1 Maternal PPVT ($n = 137$)          | 85.87 (11.75)            | 86.47 (11.37)                  | 82.07 (10.29)             | 89.25 (12.82)               | 4.22  | 0.017*|
| T2 Maternal Sensitive Guidance ($n = 128$) | 5.32 (0.96)             | 5.26 (0.86)                    | 5.00 (0.84)               | 5.75 (1.06)                 | 6.64  | 0.002**|
| T3 Child Emotional Maladjustment ($n = 129$) | 11.71 (5.98)            | 10.86 (5.63)                   | 12.46 (6.27)              | 12.03 (6.14)                | 0.89  | 0.41 |
| Pandemic variables                    |                          |                                |                           |                             |       |      |
| T4 Family Resources ($n = 118$)       | 117.41 (14.91)           | 121.75 (14.56)                 | 112.39 (15.33)            | 117.18 (13.38)              | 5.04  | 0.008**|
| T4 Child Internalizing Symptoms       | 2.39 (3.10)              | 2.15 (2.89)                    | 2.20 (3.23)               | 2.90 (3.24)                 | 0.76  | 0.46 |
| Child Age at T4                       | 9.08 (1.88)              | 9.47 (1.90)                    | 8.86 (1.95)               | 8.80 (1.71)                 | 1.92  | 0.15 |
| Days between T4 and stay-at-home order| 24.33 (12.05)            | 24.09 (11.86)                  | 22.89 (12.03)             | 26.23 (12.39)               | 0.82  | 0.44 |
| Time between T3–T4                    | 3.31 (1.43)              | 3.69 (1.351)                   | 3.07 (1.31)               | 3.03 (1.48)                 | 3.41  | 0.036*|
| n (%)                                 | 1.43 (37.3)              | 26 (33.3)                      | 22 (29.3)                 |                             | 1.81  | 0.40 |
| Child sex                             |                          |                                |                           |                             |       |      |
| Male                                  | 75 (54.7)                | 28 (37.3)                      | 26 (33.3)                 | 22 (29.3)                   | 0.16  | 0.93 |
| Maternal ethnicity                    |                          |                                |                           |                             |       |      |
| Person of Color                       | 87 (63.5)                | 18 (26.0)                      | 14 (28.0)                 | 18 (26.0)                   | 1.81  | 0.40 |
| White                                 | 50 (36.5)                | 35 (40.2)                      | 44 (32.1)                 | 40 (29.2)                   |       |      |

*Note. ANOVAs and chi-square tests of independence were used to assess for differences by group. NC = Nonmaltreating Comparison; CS = Community Standard; RET = Reminiscing and Emotion Training intervention; PPVT = Peabody Picture Vocabulary Test, Fourth Edition; T1 = Time 1; T2 = Time 2; T3 = Time 3; T4 = Time 4. * * < .05, ** < .01, *** < .001.
documented maltreatment histories by their T4 assessment and were excluded from all analyses. The choice to exclude families whose classification changed from nonmaltreating at enrollment to maltreating by T4 was informed by Shenk et al. (2021) who suggest controlling for new maltreatment in the comparison sample or dropping these families to reduce contamination. Given the limited sample size and in attempts to limit covariates and thus maximize power, these six families were excluded.

As such, the final sample for the current study consisted of 137 mother–child dyads (RET \( n = 40 \), CS \( n = 44 \), NC \( n = 53 \)). Given the limited sample size, race was collapsed into two groups (0: White, 1: Black/Latinx/Multi-racial) to maximize power. The mothers in the study were 36.5% White and 63.5% Black, Latinx, or Multi-racial. Children were 5- to 13-years-old (\( M = 9.08, SD = 1.88 \)) at T4. Among the 137 participants, there were no differences between those who did and did not complete the T4 timepoint on the included study variables. Demographic characteristics by group are presented in Table 1.

2.2. Procedure

The study’s protocol was approved by the University of Notre Dame’s Institutional Review Board (Protocol: 12-06-376). All mothers provided informed consent, including consent to access their DCS records. Research staff that administered assessments to the mothers and children were naive to maltreatment status. Mothers and children were compensated for their participation at each time point. Maltreating mothers in the RET condition received a 6-session, relational intervention that targeted maternal support during mother–child emotional discussions. Maltreating mothers in the CS condition received enhanced case management services and written parenting materials aimed to empower mothers to access resources and utilize community supports based on self-reported family resources at T1. RET and CS mothers received an equal number of weekly texts from research staff. In addition to texts, RET mothers received in-person services related to the intervention. Nonmaltreating mothers in the NC condition were followed as a control group and participated in assessments only. More details regarding the RET, CS, and NC conditions are available in previously published work (Valentino et al., 2019).

2.3. Measures

2.3.1. Maltreatment classification at T1

At baseline (T1), DCS records were coded by trained graduate-level coders using the Maltreatment Classification System (MCS; Barnett et al., 1993). To establish reliability, approximately 20% of the sample was double coded (\( \kappa = 0.81–1.00 \)). For this study, subtypes of maltreatment were collapsed to form one maltreating group.

2.3.2. Receptive language at T1

Mothers were individually administered the Peabody Picture Vocabulary Test, Fourth Edition (PPVT-4; Dunn, 2007) at T1. The PPVT-4 is a reliable assessment of receptive language ability. Given the language-based nature of the assessments, especially the reminiscing task, standard scores were used as an exclusion criterion for mothers scoring lower than two standard deviations below the sample mean. As this may fundamentally influence how these mothers were able to engage with the verbal content in the task, these families were excluded from all analyses.

2.3.3. Maternal sensitive guidance during reminiscing at T2

Mothers identified four one-time past emotional events experienced by the mother and child together in which the child felt happy, sad, scared, and angry (Koren-Karie et al., 2003). The emotion word and the event were written on index cards before the task began. Maternal sensitive guidance was coded directly from the videotapes using the Autobiographical Emotional Events Dialogue (AEED; Koren-Karie et al., 2003) coding manual. A composite score was created by averaging the following seven criteria which were each coded on 9-point Likert scales with higher scores indicating more of the given behavior: (1) shift of focus, (2) acceptance and tolerance, (3) involvement and reciprocity, (4) closure of negative feelings, (5) structuring, (6) overall adequacy of the stories, and (7) overall coherence of the stories. Interrater reliability was assessed by double coding 20% (\( n = 50 \)) of the videotapes, with intraclass correlation coefficients for individual subscales ranging from 0.71 to 0.93. The sensitive guidance composite had good internal consistency \( \alpha = 0.90 \).

2.3.4. Child maladjustment at T3

Mothers completed the 25-item Strengths and Difficulties Questionnaire (SDQ; Goodman, 2001) about their children’s behaviors at the T3 timepoint, one year following the intervention. The current study summed mothers’ answers across the emotional problems, conduct problems, hyperactivity-inattention and peer problems subscales into a single composite. The composite measure of maladjustment displayed good reliability \( \alpha = 0.84 \).

2.3.5. Family resources at T1 and T4
The Family Resource Scale (FRS) is a 30-item questionnaire assessing the adequacy and availability of resources in households within the last month (Dunst & Leet, 1987; Van Horn et al., 2001). The FRS assesses both basic needs (e.g., clothes, shelter, food) and higher-order needs (e.g., money for vacation, to save, for entertainment), and reflects a loose hierarchy of needs (Brannan et al., 2006). It was administered to mothers at T1 and T4. Respondents were asked to respond by rating the perceived adequacy of each resource ranging from 1: not at all adequate to 5: almost always adequate. Resources assessed include basic needs, housing and utilities, benefits, social needs/self-care, childcare and extra resources. Higher scores indicated more perceived resources. The FRS total score was a composite of all items and provided a broad conceptualization of both concrete and psychosocial resources of different levels. The FRS is a reliable and valid tool for perceived adequacy of resources among diverse families (Brannan et al., 2006; Van Horn et al., 2001). The reliability of the FRS total score was good both at T1 (α = 0.88) and T4 (α = 0.79). While items may be grouped into subscales, the original authors suggest the use of a global sum score (Brannan et al., 2006; Dunst & Leet, 1987). Additionally, in the present sample, some of the subscales outlined by Brannan et al. (2006) demonstrated poor internal consistency. Furthermore, an exploratory factor analysis (EFA) was conducted to better understand if sub-domains of family resources emerged. The EFA revealed one large factor and this, paired with the high internal consistency of the FRS total score, supported our use of the FRS total score as an appropriate measure of cumulative family resources.

### 2.3.6. Child internalizing symptoms at T4

Child internalizing symptoms during the pandemic were measured using a five-item measure adapted from Pregnancy and Risk Assessment Monitoring Symptoms (PRAMS; O’Hara et al., 2012; Davis et al., 2013). The adapted PRAMS was utilized to reduce respondent burden. The items included assessed symptoms of anxiety (feeling panicky, and problems sleeping) and depressive symptoms (depressed mood, hopelessness, and feeling slowed down) over the last week. On each item, mothers were asked to respond on a five-point Likert scale (0: never to 4: almost always) about how much the question applied to their child. The five items were then summed to create a single measure of internalizing symptoms. The five-item measure of internalizing symptoms displayed acceptable reliability (α = 0.72). As alpha is influenced by the number of items on a test, average inter-item correlations (AICs) were conducted to provide an additional measure of reliability. The mean AIC for the five items were 0.35 (range 0.15–0.48), which was within the ideal range of 0.15 and 0.50 (Clark & Watson, 2019), indicating adequate internal consistency and limited redundancy.

### 2.4. Analytic strategy

Of the 137 participants with data from the supplemental T4 timepoint, there was some missing data due to missed visits within the larger study. At the baseline visit (T1), all 137 families completed the visit. Six months after the intervention, 128 of the 137 families completed the T2 visit (RET n = 37, CS n = 39, NC n = 52). One year after the intervention, 131 families completed the T3 visit (RET n = 38, CS n = 41, NC n = 52). To assess for patterns of missingness, Little’s test of missing completely at random (Little, 1998) was conducted in SPSS (Version 26, IBM Corp). The test was not statistically significant ($\chi^2(19) = 20.21, p = .38$) and thus, missing variables were imputed using the full information maximum likelihood estimation method, a robust method of estimating missing data (Enders & Bandalos, 2001).

To assess the effects of family resources during the COVID-19 pandemic, and the indirect effects of the RET intervention and maltreatment through maternal sensitive guidance and child maladjustment on child internalizing symptoms during the pandemic, a single path analysis examining serial longitudinal mediation was conducted in Mplus Version 8 (Muthen & Muthen, 2017). The inclusion of all variables within a single model allowed for one path analysis to address all hypotheses. Specifically, our first and second hypotheses, which examined the role of concurrent family resources and race on child internalizing symptoms, were addressed by modeling the direct effect of each variable on child internalizing symptoms. Our third set of hypotheses, that involvement in the intervention would be related to fewer child internalizing symptoms during the pandemic though maternal sensitive guidance and a prior assessment of child maladjustment, and that maltreatment (untreated) would be associated with greater child internalizing symptoms during the pandemic through maternal sensitive guidance and child maladjustment, were assessed via indirect effects. Both maltreatment and RET were dummy coded. Maltreatment was dummy coded to reflect the presence or absence of maltreatment prior to enrollment (1: maltreatment, 0: nonmaltreatment). RET was dummy coded similarly (1: RET provided, 0: no RET). This strategy allowed us to examine all three groups of interest (RET, CS and NC) within two variables. Moreover, this dummy coding system allows us to examine the effects of RET on child internalizing symptoms during the pandemic, while controlling for maltreatment, and likewise the effects of maltreatment on child internalizing symptoms, controlling for RET. Baseline family resources (T1), child age at T4, and time between T3 and T4 were included as covariates on child internalizing symptoms during the pandemic.

### 3. Results

#### 3.1. Descriptive analyses

Means and standard deviations of the primary study variables presented in Table 1. ANOVAs and chi-squared tests were used to examine group (RET, CS, NC) differences in primary study variables. There was a significant group difference between the length of
time between the T3 and T4 visits \((F(2, 128) = 3.41, p = .036)\) with there being more time between visits for those in the NC condition \((M = 3.69 \text{ years}, SD = 1.35)\) compared to those in the RET \((M = 3.03, SD = 1.48)\) or CS \((M = 3.07, SD = 1.40)\). There was a group difference in T4 family resources, \(F(2, 134) = 5.04, p = .008\), with CS mothers reporting fewer resources \((M = 112.39, SD = 15.33)\) than NC mothers \((M = 121.75, SD = 14.56)\). Consistent with past intervention research (Valentino et al., 2019), there was also a difference in maternal sensitive guidance at the T2 timepoint \((F(2, 125) = 6.64, p = .002)\), with RET mothers having higher maternal sensitive guidance \((M = 5.75, SD = 1.10)\), than NC mothers \((M = 5.26, SD = 0.86)\) and CS mothers \((M = 5.00, SD = 0.84)\). No differences emerged for T4 child internalizing symptoms, T3 child maladjustment, age, race, or T1 family resources. Correlations among primary study variables are presented in Table 2.

### 3.2. Main analyses

All hypotheses were examined using a single path analysis in Mplus Version 8 (Muthén & Muthén, 2017). Indirect effects were examined using the bias-corrected bootstrap method (MacKinnon et al., 2004) and 1000 resamples were used to construct 95% confidence intervals around the indirect effect coefficients. Intervals containing 0 were considered nonsignificant. Covariates included child age at the T4 time-point, family resources at T1, and the time between the T3 and T4 assessment. The model was fully saturated. Unstandardized coefficients are presented in text and significant standardized coefficients are presented Fig. 1. Unstandardized confidence intervals are presented for indirect effects.

**Table 2**
Correlations among study variables.

| Variable                        | 1.       | 2.       | 3.       | 4.       | 5.       | 6.       | 7.       |
|---------------------------------|----------|----------|----------|----------|----------|----------|----------|
| T1 Family Resources             | 1.00     |          |          |          |          |          |          |
| T2 MSG                          | 0.12     | 1.00     |          |          |          |          |          |
| T3 Child EM                     | -0.08    | -0.19*   | 1.00     |          |          |          |          |
| T4 Child Internalizing          | -0.08    | 0.13     | 0.21*    | 1.00     |          |          |          |
| T4 Family Resources             | 0.40**   | 0.07     | -0.17*   | -0.34**  | 1.00     |          |          |
| T4 Child Age                    | 0.12     | 0.19*    | -0.02    | -0.11    | 0.07     | 1.00     |          |
| Time between T3 - T4            | 0.13     | 0.15     | -0.05    | -0.11    | 0.11     | 0.76**   | 1.00     |

*Note. MSG = Maternal Sensitive Guidance; EM = Emotional Maladjustment; T1 = Time 1; T2 = Time 2; T3 = Time 3; T4 = Time 4. *p < .05, **p < .01, ***p < .001.

**Fig. 1.**

*Longitudinal and Concurrent Predictors of Child Internalizing Symptoms*

*Note. Path analysis model. Path coefficients are standardized. Dashed lines indicate associations with control variables. Bolded lines indicate significant associations. The model is saturated. For simple presentation only the paths of interest are shown. Maltreatment = 1: maltreatment, 0: no maltreatment; Reminiscing and Emotion Training Intervention = 1: Intervention provided, 0: Intervention not provided; T1 = Time 1; T2 = Time 2; T3 = Time 3; T4 = Time 4. *p < .05; **p < .01.*
The first hypothesis, examining the association between concurrent resources and T4 child internalizing, was supported. Family resources at T4 were significantly associated with T4 child internalizing symptoms ($b = -0.07, SE = 0.02, p < .01$), suggesting fewer family resources were associated with elevated internalizing symptoms. The second hypothesis examined the role of race in predicting child internalizing symptoms during the pandemic. Contrary to our hypothesis, race was not associated with child internalizing symptoms ($b = -0.19, SE = 0.52, p = .71$).

The third set of hypotheses, that involvement in the RET intervention would be related to fewer child internalizing symptoms during the pandemic while maltreatment would be associated with greater child internalizing symptoms during the pandemic, was partially supported. There was a significant direct effect of the RET intervention on T4 child internalizing symptoms through T2 maternal sensitive guidance and T3 child maladjustment (95% CI [−0.294, −0.001]), suggesting RET-related improvements in maternal sensitive guidance and child maladjustment were associated with reduced child internalizing symptoms during the pandemic. Consistent with prior research (Valentino et al., 2019), there was a significant association between RET and T2 maternal sensitive guidance ($b = 0.78, SE = 0.23, p = .001$), with RET being associated with improved maternal sensitive guidance. There was a trending negative relationship between T2 maternal sensitive guidance and T3 child maladjustment ($b = -0.99, SE = 0.56, p = .08$), and significant positive relationship between T3 child maladjustment and T4 child internalizing symptoms ($b = 0.09, SE = 0.04, p = .03$). There was not a significant direct effect of RET on T4 child internalizing symptoms ($b = 0.51, SE = 0.32, p = .11$). Contrary to our hypothesis on maltreatment, maltreatment was not associated with child internalizing symptoms during the pandemic. The direct effect of maltreatment on T4 internalizing was nonsignificant ($b = -0.67, SE = 0.66, p = .31$). The indirect of maltreatment on T4 child internalizing symptoms through T2 maternal sensitive guidance and T3 child maladjustment was also nonsignificant (95% CI [−0.002, 0.146]). The covariates, including a prior measure of resources at T1, child age at T4, and time between the T3 and T4 visits, were not significantly associated with T4 child internalizing symptoms.

4. Discussion

The COVID-19 pandemic has had a profound impact on family functioning (Gassman-Pines et al., 2020). Our aim was to characterize and examine predictors of internalizing symptoms among a racially diverse sample of children with and without maltreatment histories during the pandemic. In particular, we evaluated how family resources during the pandemic, race, maltreatment, and involvement in the Reminiscing and Emotion Training (RET; Valentino et al., 2019) intervention were associated with child internalizing symptoms during the pandemic. Utilizing longitudinal data following maltreating and nonmaltreating mothers and their children after participation in a RCT of the RET intervention, we demonstrated that family resources during the pandemic and pre-pandemic involvement in the RET intervention were significant predictors of child internalizing symptoms. Specifically, having more resources and receiving the RET intervention predicted lower levels of child internalizing symptoms during the pandemic. Accordingly, we advance an understanding of risk and protective processes underlying child internalizing symptoms during the pandemic.

Our first hypothesis, that fewer resources during the pandemic would be associated with elevated internalizing symptoms in children while controlling for pre-pandemic resources and other relevant covariates, was supported. Results indicated that T4 family resources were negatively associated with T4 child internalizing symptoms, such that more resources were concurrently associated with lower levels of internalizing symptoms. The observed associations between family resources and child internalizing symptoms are consistent with past research on FSM (Conger et al., 2010; Masarik & Conger, 2017), which posits that economic hardships can lead to child maladjustment through cascades within the family system. This finding is also consistent with other research on child mental health during the pandemic that suggests that the cumulative pandemic-related hardships (e.g., job/income loss, caregiving stress) is associated with poorer psychological functioning (Gassman-Pines et al., 2020). It is possible that the scarcity and/or loss of economic or social resources associated with the pandemic led to difficulty coping with general life stressors and stressors brought on by the global crisis. Similarly, the presence of resources may have had a protective effect on mental health by creating a sense of security for children even amidst a time of uncertainty.

Notably, within this study, family resources were operationalized broadly to include several concrete financial and psychosocial resources to allow for a comprehensive assessment of perceived resource adequacy. Given the numerous economic, educational, and societal disruptions caused by COVID-19, a broad measure of family resources that includes both concrete financial and psychosocial resources was appropriate to capture the diverse effects of the pandemic. Moreover, while the family resources included in the FRS are posited to include both basic to higher-order resources, the presence of higher-order resources is not contingent the presence of more basic resources. For example, someone may still report having someone to talk with, while also endorsing concerns about paying their bills. Accordingly, cumulative family resources were important to consider for child well-being, and indeed we demonstrated an association between family resources during the pandemic and child internalizing symptoms. Our results are consistent with extant literature that emphasizes the deleterious effects of insufficient resources on child adjustment more broadly (Conger et al., 2010; Masarik & Conger, 2017).

Although additional research is needed to further elucidate the processes through which resources are associated with internalizing symptoms, it is apparent that maternal perceived adequacy of resources is a critical mechanism to consider as researchers and policymakers seek to understand and support healthy family functioning during the COVID-19 pandemic. The centrality of family resources, including both financial and psychosocial factors, in promoting resilient functioning in at-risk children also provides support for Prime et al.’s (2020) framework of adjustment to the COVID-19 pandemic. The relevance of these findings is further underscored by family resources being predictive of child internalizing symptoms even while controlling for other factors implicated by past research to be associated with risk for poor child mental health (e.g., maltreatment, prior assessment of family resources and emotional...
maladjustment). In light of national survey data in which low-income families report being unprepared to manage an unexpected loss of income (Parker et al., 2020), low-income families may be especially in need of resource support during the pandemic.

Our second hypothesis, that Black/Latinx/Multi-racial children would have greater internalizing symptoms compared to White children, was not supported. This finding was unexpected because COVID-19 has had a disproportionate impact on communities of color (Tai et al., 2020). This impact, however, is not uniform. Moreover, due to a limited sample size, Black, Latinx, and Multi-racial families were collapsed into a single group which limited our ability to assess functioning in each group. Alternatively, this finding may reflect that minority families are underreporting their children’s symptoms. Indeed, past research suggests that as compared to European American parents, Latinx and African American parents are less likely to rate their children’s mental health as poor and less likely to endorse the presence of a mental health problem in the last year (Roberts et al., 2005). In addition, among racial or ethnic minority parent–child dyads, parents consistently report less symptoms than their children, which could reflect the use of different thresholds when rating internalizing symptoms (Lau et al., 2004; Roberts et al., 2005). Given this, more research is needed to better understand the pandemic within different racial and ethnic groups.

Our third hypothesis, which examined the long-term effects of the RET intervention and maltreatment on child internalizing symptoms, was partially supported. There was a positive indirect effect of the RET intervention on child internalizing through improved post-intervention maternal sensitive guidance and reduced T3 child maladjustment. This finding extends past research with this sample that has demonstrated that mothers who engaged in the intervention were more sensitive when reminiscing with their children following the intervention compared to mothers in the CS group (Valentino et al., 2019), and that maternal sensitive guidance mediates the relationship between RET and child internalizing one year following the intervention (Valentino et al., 2021). Specifically, we found evidence suggesting continued benefits of the RET intervention on youth mental health even in the context of the pandemic. Notably, despite the intervention occurring approximately four years prior to the pandemic, involvement in the RET intervention was associated with reduced child internalizing symptoms though improved maternal sensitive guidance and child adjustment. The longitudinal benefit of the RET intervention provides exciting preliminary data on the importance of intervening to improve positive emotion socialization parenting behaviors among at-risk families and suggests that these parenting skills may continue to benefit youth in coping with new challenges over time and in unique contexts, such as during the COVID-19 pandemic.

In the context of the pandemic, maternal capacity to engage in sensitive and engaged discussions about difficult past events and emotional experiences may be especially important for child’s internalizing symptoms. Indeed, cross-sectional work by Cohodes et al. (2021) found that parent emotion coaching moderated the relationship between COVID-19 family stress and child internalizing symptoms, such that high emotion coaching was associated with fewer child internalizing symptoms, regardless of family stress level. The present study extends that finding to maltreating families and provides longitudinal evidence for the role of positive emotion socialization behaviors in predicting child adjustment during the pandemic. It is possible that mothers in the RET condition spent more time jointly discussing their children’s emotions and that these supportive emotion socialization behaviors had a protective effect on their children’s functioning. Indeed, maternal reminiscing skills have been demonstrated to remain stable from post-intervention to the one-year follow up (Valentino et al., 2021). Alternatively, it may also be that the experience of prior maternal sensitivity during emotional discussions provides a sense of security for children as they managed the uncertainty of the pandemic.

Our hypothesis that maltreatment would be associated with elevated child internalizing symptoms during the pandemic was not supported. It is possible that current resources may better predict internalizing symptoms in the context of a pandemic, such that inadequate family resources are a more proximal risk factor for child adjustment. These findings may also be influenced by our sample characteristics. In particular, all of the maltreating dyads received some form of support through participation in the RCT; dyads in the CS condition received frequent contact from family coaches with information about how to address family resource needs, and families in the RET condition received frequent contact and 6 home visits aimed at improving maternal emotion socialization. Given the aforementioned value of family resources, the community resource information provided to the CS condition may have benefited these families during the pandemic.

Our findings provide important insight into how high-risk families are responding to the pandemic, but there are some limitations. First, our sample size limited our ability to conduct more complex analyses. In our ad-hoc assessment during the pandemic, we were not able to reach all families who had enrolled in the intervention study. While capitalizing on previously collected longitudinal data importantly improves our understanding of family and individual level risk and resilience factors during the pandemic, the sample size for this study limits more complex analyses.

Another important consideration is that our assessment was limited to children’s internalizing symptoms and did not allow for identification of clinical levels of symptoms or impairment and instead provided a continuous measure of symptomatology. It is likely that some degree of elevated depressive and anxiety symptoms are normative responses to the context of a pandemic, especially among families with insufficient resources as they may be managing acute stressors, such as food insecurity or housing instability, in addition to the broader stressors presented by the pandemic. Given this, it will be important for future work to continue to examine child internalizing symptoms over time and to evaluate the degree of impairment associated with symptomology. Moreover, given considerable research linking maternal mood to child functioning (Goodman et al., 2011), future research should also consider how maternal psychological functioning is associated with child well-being in the context of the pandemic.

In addition, our data were collected from mothers in the early months of the pandemic and around the time that the United States government provided stimulus checks. As such, these findings may not fully capture the impact of the pandemic on financial and psychological well-being. Another limitation of our study was that we did not assess maternal emotion socialization behaviors during the pandemic. However, there were several methodological challenges to collecting observational data during the COVID-19 pandemic, especially among low-income families without consistent access to technology that would have allowed for a virtual observation of how mothers engage in positive emotion socialization behavior to assist their children in coping with emotions during...
the pandemic. Despite these limitations, this study had notable strengths, including the use of longitudinal data, the ability to evaluate the effects of a pre-pandemic emotion socialization intervention, and a diverse sample among which to investigate our research questions. Longitudinal data allowed for an examination of how the RET intervention affected child internalizing symptoms during the pandemic controlling for pre-pandemic psychological functioning and family resources. These findings suggest that there was a protective effect of prior involvement in an intervention aimed at improving maternal sensitive guidance during reminiscing. Moreover, these findings emphasize the deleterious effect of scarcity and/or loss of family resources above and beyond pre-pandemic functioning and known risk factors, such as maltreatment. Finally, the sample consisted of low-income families with and without histories of child maltreatment, furthering our understanding of how the pandemic has impacted already vulnerable families. Taken together, these results advance an understanding of the psychological impact of the pandemic and highlight how family resources during the pandemic and intervention-related improvement in maternal emotion socialization contribute to current child psychological adjustment in the context of the COVID-19 pandemic.

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Declaration of competing interest

None.

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