

Breaking the Cycle of Intergenerational Childhood Maltreatment: Effects on Offspring Mental Health

Child Maltreatment
2022, Vol. 0(0) 1–11
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DOI: 10.1177/10775595211067205
journals.sagepub.com/home/cmj
SAGE

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Abstract

This study evaluated how continuities and discontinuities in the intergenerational transmission of maltreatment affect offspring psychopathology. Data from a multigenerational prospective, longitudinal study were used to compare the severity of offspring psychopathology in families with no history of maltreatment (*controls*) and those in which parents, offspring, or both experienced childhood maltreatment (*cycle breakers*, *initiators*, and *maintainers*, respectively). Participants included 454 parents ($M_{age} = 47.1$, $SD_{age} = 3.4$) and their 697 offspring ($M_{age} = 22.3$, $SD_{age} = 6.3$). Offspring of cycle breakers reported less psychopathology than offspring of cycle maintainers and did not report more psychopathology than offspring of controls. Offspring of cycle initiators and maintainers reported comparable levels of psychopathology. Results suggest that breaking the cycle of maltreatment buffers offspring from risk for psychopathology associated with parental maltreatment, with no enduring or additive effects of maltreatment across generations. Our findings highlight the need for maltreatment prevention programs and further research to identify conditions and characteristics that reduce the probability of intergenerational transmission.

Keywords

child maltreatment, child abuse, neglect, psychopathology, longitudinal research

Introduction

Childhood maltreatment is recognized as a global public health problem that contributes to morbidity and mortality (Gilbert et al., 2009). An increasing empirical literature has reported on the lasting impact of child maltreatment on physical and mental health and social and economic functioning in adulthood (Currie & Widom, 2010; Gilbert et al., 2009; Herrenkohl et al., 2013; Lindert et al., 2014; Scott et al., 2012; Wegman & Stetler, 2009; Widom, 1999; Widom et al., 2007). One meta-analysis of eight studies showed that a childhood history of maltreatment doubled the odds of major depressive disorder and increased the odds of an anxiety disorder by 2.7 times (Li et al., 2016).

Less well-recognized is the possibility that childhood maltreatment contributes to the mental and physical health of future generations. Consistent with this possibility, children whose parents have histories of childhood maltreatment are at elevated risk for emotional and behavioral problems compared with the offspring of non-maltreated parents (Bosquet Enlow et al., 2018; Warmingham et al., 2020), and a meta-analysis of 12 studies found that a maternal history of childhood maltreatment had a small but significant effect ($r = .12$, 95% CI = .11–.14) on offspring mental health (Su et al., 2020). Su et al. (2020) noted that intergenerational continuities in childhood

maltreatment likely account for part of the association between parental maltreatment and offspring psychopathology, among other potential mechanisms of risk transmission. This raises the question of whether a parent's history of maltreatment, a child's history of maltreatment, or the combination of the two is most predictive of a child's risk for psychopathology. Depending on the answer to this question, there are different implications for who should be targeted in maltreatment prevention programs. Answering this question requires the ability to identify both continuities and discontinuities in the intergenerational transmission of maltreatment. To our knowledge, however, no studies have examined whether discontinuities in intergenerational maltreatment might disrupt the association between parental histories of childhood

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maltreatment and offspring psychopathology. In the present study, we seek to address this gap in the literature.

Mechanisms Linking Parental Maltreatment to Offspring Psychopathology

Maltreatment in one generation might affect psychological outcomes in the next through a number of mechanisms (Berlin et al., 2011). It may be that children born to parents with a history of childhood maltreatment are at elevated risk for psychopathology because they, too, are at heightened risk for experiencing maltreatment. Studies examining the intergenerational cycle of maltreatment over the past three decades show that victims of abuse and neglect are more likely than non-victims to perpetrate abuse and neglect against others (Kaufman & Zigler, 1987; Schofield et al., 2013). Bartlett et al. (2017) estimated that a parental history of maltreatment increased the odds of offspring victimization by at least 72%. Although recent estimates of intergenerational transmission range from 7% to 70% (Berlin et al., 2011; Berzenski et al., 2014; Warmingham et al., 2020), a meta-analysis of 80 studies reported an overall moderate effect size for intergenerational transmission ($d = .45$, 95% CI = .37–.54) (Madigan et al., 2019). Furthermore, individuals who experience maltreatment as children are more likely to experience intimate partner violence later in life (Renner & Slack, 2006), which increases the likelihood of offspring abuse from three- to nine-fold (Moffitt & Caspi, 1998). Thus, parents or their partners may perpetrate maltreatment in the next generation, which may contribute to offspring emotional and behavioral problems. In fact, a number of studies have demonstrated that offspring maltreatment mediates the relationship between parental maltreatment and offspring psychopathology (Bosquet Enlow et al., 2018; Choi et al., 2019; Russotti et al., 2021; Sierau et al., 2020; Warmingham et al., 2020).

Discontinuities in Intergenerational Maltreatment: Possible Effects

Despite evidence for intergenerational continuities in maltreatment, the estimates of intergenerational transmission demonstrate that there are individuals with a history of abuse and neglect who *also* break the cycle of maltreatment (Berzenski et al., 2014). Though previous studies have largely focused on how continuities in intergenerational maltreatment contribute to risk for offspring psychopathology (Madigan et al., 2019), to our knowledge, no prior studies have studied how *discontinuities* in this cycle affect emotional and behavioral outcomes in offspring. We consider three possibilities for potential effects of discontinuities in intergenerational childhood maltreatment on offspring mental health.

The first possibility is that offspring of parents with histories of abuse and neglect might be at elevated risk for psychopathology even in the absence of continued maltreatment in

the offspring generation. This possibility is supported by evidence indicating that parents with histories of childhood maltreatment are more likely than those without to be characterized by a number of factors that confer risk for offspring psychopathology. These include heightened psychopathology (Choi et al., 2019), enduring biological changes to the stress system (Blaze & Roth, 2015), more financial hardship (Zielinski, 2009), and less perceived social support (Dixon et al., 2009). These parents also demonstrate poorer quality of caregiving behaviors, with more problematic parenting practices and less positive parenting (Dixon et al., 2009; Greene et al., 2020). A parental history of adverse childhood experiences is also associated with attenuated levels of protective factors for offspring, such as resilience and social connections (Panisch et al., 2020). Further, a growing body of literature indicates that effects of trauma might be transmitted through epigenetic modifications to future generations, which may influence offspring psychopathology (Yehuda & Lehrner, 2018). Given that these risk factors in the parental generation may have enduring adverse consequences for offspring even when the cycle of maltreatment is broken, we call this possibility the *enduring risk* hypothesis.

The second possibility is that the mental health problems, stress, financial hardships, lack of social support, and maladaptive parenting practices reported by parents with childhood maltreatment histories *also* contribute to risk for offspring maltreatment, resulting in intergenerational continuities in maltreatment—we call these families “cycle maintainers.” In contrast, parents who break the cycle of maltreatment—“cycle breakers”—may experience fewer or less severe adversities through a number of protective factors. This possibility is supported by studies that found that mothers who broke the cycle of maltreatment were less likely to experience psychopathology, socioeconomic disadvantage, and domestic partner violence and more likely to experience healthy partner relationships and family support than cycle maintainers (Jaffee et al., 2013; St-Laurent et al., 2019). Additionally, healthy partner relationships further buffered women with histories of maltreatment from experiencing psychopathology (Jaffee et al., 2017). Another study found that cycle breakers were more likely to be financially solvent and report higher perceived social support than cycle maintainers (Dixon et al., 2009). These findings imply that, with fewer cumulative adversities than cycle maintainers, cycle breakers might have offspring who experience relatively low levels of psychopathology. In other words, offspring of cycle breakers may be buffered from risk for psychopathology; we thus call this possibility the *buffering risk* hypothesis.

Finally, we note that intergenerational discontinuities can take two forms. As discussed, parents can be cycle breakers. Alternatively, parents can become cycle initiators, meaning that they did not experience childhood abuse or neglect, but their children have. This form of discontinuity also raises two possibilities. If offspring maltreatment is the strongest risk factor for offspring psychopathology, then the offspring of

cycle initiators should have equally high levels of emotional and behavioral problems as the offspring of cycle maintainers. In contrast, if there are *additive effects* of offspring maltreatment and the psychosocial disadvantage (or the biological transmission of risk) associated with a parental history of maltreatment, the offspring of cycle initiators should have lower levels of emotional and behavioral problems than the offspring of cycle maintainers. That is, when both generations experience maltreatment, there may be maximal risk for psychopathology. If only one generation experiences maltreatment (i.e., when the cycle of maltreatment is discontinued or initiated), there may be lower offspring psychopathology due to fewer cumulative risk factors, though we would expect that these offspring still have greater risk for psychopathology than those from families with no history of maltreatment in either generation. Studies that have compared risk factors between cycle breakers, cycle maintainers, and families with no history of maltreatment have found that, while cycle breakers largely experience fewer adversities than cycle maintainers, they are significantly more likely than those without maltreatment histories to have less positive parenting styles, more psychopathology, and less social support (Dixon et al., 2009; Jaffee et al., 2013). Thus, while much risk is attenuated by breaking the cycle, some risk may also endure. Consistent with these findings, we might expect childhood maltreatment in each generation to have additive effects on offspring psychopathology due to accumulating risk, particularly when parents have a history of maltreatment. We call this the *additive risk* hypothesis.

To test the three possibilities discussed above, it is necessary to be able to categorize parent-child dyads into the four possible groups for the intergenerational continuity of maltreatment. In addition to cycle maintainers, cycle breakers, and cycle initiators, we can also identify “controls” (no maltreatment in either generation). Of note, we do not exclusively consider parents as the individuals capable of perpetrating maltreatment in these groups. To our knowledge, no studies to date have compared the severity of psychopathology between offspring of these four possible intergenerational groups. The novelty of this approach allows us to test hypotheses about discontinuities in maltreatment across generations and identify potential additive effects which have not yet been explored in the literature.

The Present Study

We tested our three hypotheses using data from a multigenerational prospective study. We conceptualize this study as an investigation of the intergenerational transmission of effects of maltreatment in members of three generations, whom we refer to as the G1, G2, and G3 individuals. The G1 individuals represent the parents of the second generation of individuals (G2s), who were originally selected for the study to examine how G1 individuals’ perpetration of childhood maltreatment (or lack thereof) affected G2 outcomes. The G2s, who are now all adults, represent the parents in the present study, and their offspring represent the G3 individuals.

We report comparisons between specific intergenerational groups based on a priori hypotheses informed by the three possibilities described above. The *enduring risk* hypothesis would predict that, even in the absence of continued maltreatment, offspring of maltreated parents may continue to be at risk for psychopathology due to heightened adversities. To test this hypothesis, we compare the offspring of cycle breakers with the offspring of controls.

The *buffering risk* hypothesis would predict that offspring of cycle breakers would be buffered from risk for psychopathology due to more optimal circumstances, as cycle breakers are less likely to experience adversities than cycle maintainers (Dixon et al., 2009; Jaffee et al., 2013, 2017). To test this hypothesis, we compare the offspring of cycle breakers to the offspring of cycle maintainers.

Finally, the *additive risk* hypothesis would predict that the effect of childhood maltreatment in addition to the accumulated psychosocial adversity (or biological risk) associated with a parent’s maltreatment history would be worse on offspring emotional and behavioral problems than the effect of childhood maltreatment alone. To test this hypothesis, we compare the offspring of cycle maintainers and cycle initiators.

Method

Overview and Design

The present study utilized a prospective cohorts design to better understand how child abuse and neglect affect individual outcomes across the lifespan and in subsequent generations (Widom, 1989). See Table S1 (online Appendix S1) for a chronology of study events.

Study personnel identified a sample of children who experienced physical or sexual abuse and/or neglect before the age of 11 ($N = 908$) by selecting documented cases from county court records. The mean number of charges for specific types of abuse or neglect was 1.81, with 12.1% of the sample characterized by multiple abuse or neglect charges. Please see online Appendix S1 for additional information about official records of maltreatment in the original sample. We utilized court-substantiated cases of child abuse and neglect to avoid any ambiguity in what constituted abuse or neglect. A control group was also identified to match the original sample on the basis of age, race, sex, and grade using elementary school records for school-aged children. These records were utilized because elementary schools represented very homogeneous neighborhoods during this period of time (i.e., 1967–1971) before schools were fully integrated. Children who were under school age were matched with controls based on age, race, sex, and the same hospital of birth using county birth records. Matches were found for 667 (73.7%) of the 908 children in the abused and neglected sample. Non-matches occurred in instances where children were born in another country or state, identifying information was missing on records, or a match could not be found. This design involves the assumption that

the primary difference between the maltreated and comparison groups is in the childhood abuse or neglect experience. Since it is not possible to randomly assign participants to groups, the assumption of equivalence is an approximation.

The original sample of abused and neglected individuals and their matched controls comprise the G2 generation. Study personnel first contacted G2s for assessments and interviewed them as adults during 1989–1995 (Wave 1). G2s participated in follow-up assessments in 2000–2002 (Wave 2), 2003–2005 (Wave 3), and 2009–2010 (Wave 4). See [Widom \(1989\)](#), [Widom et al. \(2015\)](#), and online [Appendix S1](#) for further details on sampling, recruitment, and follow-up procedures over study waves.

For the purpose of assessing the intergenerational transmission of maltreatment and its effects on offspring psychopathology, G2 respondents ($N = 649$) and a subset of the G3 offspring ($N = 697$) participated in interviews in 2009 and 2010. See [Figure S1](#) (online [Appendix S1](#)) for an overview of the G2 and G3 sample selection process. The final G2 analytic sample consisted of 454 parents (37.9% male, $M_{\text{age}} = 47.1$, $SD_{\text{age}} = 3.4$, age range: 37–55). The G3 sample comprised 158 minors (50.6% male, $M_{\text{age}} = 13.6$, $SD_{\text{age}} = 2.8$, age range: 8–17) and 539 adults (50.3% male, $M_{\text{age}} = 24.8$, $SD_{\text{age}} = 4.5$, age range: 18–38). Some G2 parents had multiple children eligible for the study, in which case a second G3 offspring was selected to participate; thus, there are 243 sibling pairs in the analytic sample. See [Table 1](#) for additional demographic characteristics of the G2 and G3 analytic samples.

Procedure

Study personnel interviewed participants in-person at a mutually agreed-upon location. Both interviewers and participants were blind to the purpose of the study and were not informed about the presence of an abused and neglected group. All participants provided written, informed consent or assent, as age-appropriate, and received compensation for their participation. Ethical approval was granted by the Human Research Protection Program at The City University of New York (Protocol #: 2015-0133). See online [Appendix S1](#) for more detailed study procedures.

Measures

We examined G3 (offspring) participants' age, race, sex, and socioeconomic status (SES) as control variables. SES for adult G3s was informed by their own reported annual household income bracket and highest level of education completed, while minor G3s' SES was informed by their parents' income and education levels. *Parental maltreatment* was indicated by a composite measure of any physical abuse, sexual abuse, and/or neglect derived from official reports. *Offspring maltreatment* was indicated by a composite measure of any physical abuse, sexual abuse, and/or neglect derived from offspring self-report questionnaires, namely the Lifetime Trauma and Victimization History ([Widom et al., 2005](#)) and the Childhood Experiences Questionnaire ([Widom et al., 2015](#)).

Table 1. Characteristics of the G2 and G3 Analytic Samples.

Characteristics	Sample	
	G2	G3
	$n = 454$	$n = 697$
Sex	37.9	50.4
Race		
White (%)	57.7	55.5
Black (%)	36.1	35.9
Other race (%)	6.2	8.6
Abuse/neglect (%)	54.0	34.4
Physical abuse (%)	7.7	17.6
Neglect (%)	43.4	18.9
Sexual abuse (%)	8.1	12.3
Mean age at interview (SD)	47.1 (3.4)	22.3 (6.3)
Age range at interview	37–55	8–38

We assessed *offspring psychopathology* using self-report measures of anxiety, depression, posttraumatic stress disorder (PTSD), and substance use. Minor offspring completed the Revised Children's Manifest Anxiety Scale ([Reynolds & Richmond, 2000](#)), The Children's Depression Inventory—Short Version ([Kovacs, 2003](#)), and the Posttraumatic Stress Disorder Reaction Index for DSM IV ([Rodriguez et al., 2001](#)). Adult offspring completed the Beck Anxiety Inventory ([Beck & Steer, 1993](#)), Center for Epidemiological Studies Depression Scale ([Radloff, 1977](#)), and Composite International Diagnostic Interview for PTSD ([World Health Organization, 1997](#)). All offspring completed the Add Health Pretest Tobacco, Alcohol, Drugs Survey ([Harris et al., 2003](#)). All psychopathology measures had acceptable internal consistency ($\alpha > .70$). Details of measures are available in online [Appendix S1](#).

Statistical Analysis

We analyzed data for adult and minor G3s separately, as these participants completed different measures of psychopathology. Additionally, we excluded substance use variables from analyses involving minors due to the low base rate of substance use reported in this sample. See online [Appendix S1](#) for handling of missing data.

We first explored whether there were significant differences in G3 demographic characteristics between the four intergenerational groups. As all of the demographic variables were shared among G3 adults and minors, we collapsed these analyses across the two age groups and performed analyses separately within each age group as well. We used a series of one-way analyses of variance to test demographic differences for continuous variables (i.e., age and SES) and chi square tests of independence to test demographic differences for categorical variables (i.e., race and sex).

In order to avoid issues of multiple testing, we created latent variables for psychopathology in each age group. Previous

studies that have investigated the factor structure of psychopathology (e.g., Caspi et al., 2014) provide support for a general “p factor” that accounts for correlations between distinct subtypes of psychopathology, as well as correlations between dimensions of psychopathology (e.g., internalizing and externalizing). Given that substance use variables were excluded from analyses for minors, we constructed a single latent factor representing internalizing psychopathology with the remaining psychopathology measures (anxiety, depression, and PTSD). For adult psychopathology, we compared one-factor, two-factor correlated factors, and bifactor (with two specific factors) models using confirmatory factor analyses (CFA) to find acceptable factor structures (see Figure S2, online Appendix S1). We extracted CFA factor scores to represent latent psychopathology variables in both age groups (see online Appendix S1).

We then tested our three a priori planned comparisons, which were preceded by a one-way ANCOVA including G3 demographic variables (age, race, sex, and SES) as covariates to confirm that the omnibus group effect was significant in both G3 minors and adults (see Tables S8 and S9). We used the Huber/White Variance estimator to account for non-independence of observations due to the presence of siblings in the sample. We conducted all analyses in IBM SPSS Statistics Version 26, with the exception of CFAs, which we performed in R.

Results

Demographic Differences Between Intergenerational Groups

As shown in Table 2, we found significant differences in all G3 demographic characteristics between the four intergenerational

groups in the full sample. Overall, G3s in the cycle maintainer group were the oldest and most socioeconomically disadvantaged, while G3s in the control group were the youngest and most socioeconomically advantaged. The cycle maintainer and initiator groups had lower percentages of White and male G3s than the cycle breaker and control groups. See Table 2 for group differences within each age group.

Derivation of Latent Variable Scores

The internalizing scale informed by the three measures of psychopathology in the minor sample demonstrated good internal consistency ($\alpha = .82$), indicating that a one-factor solution was appropriate for these data. We extracted scores for this single factor representing internalizing psychopathology from a CFA model. Using CFA for adult psychopathology data, we found that the bifactor model demonstrated superior fit over both the two-factor ($\chi^2(4) = 20.73, p < .001$) and one-factor models ($\chi^2(5) = 219.65, p < .001$), and we extracted the general psychopathology score from this model. See online Appendix S1 and Table S7 for details.

Planned Comparisons between G3 Minor Intergenerational Groups

We analyzed minor data using the three a priori planned comparisons, with internalizing psychopathology as the outcome variable. See Figure 1 and Table S10 (online Appendix S1) to view the group means for this analysis. Because a Levene Test found that the homogeneity of variance assumption had been violated, $p = .045$, we used Welch's

Table 2. G3 Demographic Differences Between Intergenerational Groups – Full Sample and Split by Age.

	Intergenerational Groups				F
	Control	Cycle Breaker	Cycle Initiator	Cycle Maintainer	
Age (M, SD)	21.12 (6.48) ^a	21.71 (5.87) ^{a,b}	23.45 (6.34) ^{b,c}	23.88 (6.23) ^c	7.92***
Minor age	13.50 (2.72)	13.26 (2.95)	13.63 (2.97)	14.25 (2.53)	.76
Adult age	24.45 (4.54) ^{a,b}	23.92 (4.19) ^a	25.60 (4.61) ^{b,c}	25.92 (4.66) ^c	6.07***
SES (M, SD)	.24 (.83) ^a	-.05 (.80) ^{b,c}	.04 (.79) ^{a,b}	-.26 (.91) ^c	11.59***
Minor SES	.59 (.88) ^a	.45 (.72) ^{a,b}	.82 (.60) ^a	-.09 (1.04) ^b	5.76***
Adult SES	.09 (.76) ^a	-.18 (.77) ^b	-.14 (.72) ^{a,b}	-.29 (.88) ^b	6.03***
					χ^2
Race (% White)	59.3	58.5	47.2	51.9	20.04**
Minor race	61.8	60.4	63.2	35.7	20.16**
Adult race	58.3	57.9	43.7	55.3	12.54 [†]
Sex (% male)	54.5	56.5	48.1	38.1	14.45**
Minor sex	48.5	62.8	42.1	42.9	3.89
Adult sex	57.1	54.9	49.4	37.1	13.42**

Note. The first row for each variable shows data for the full G3 sample (i.e., minor and adult data combined). Non-overlapping sets of superscripts indicate significant differences between group means as revealed by Tukey HSD post-hoc tests. SES = socioeconomic status composite score from standardized measures.

** $p < .01$. *** $p < .001$.

[†] $p = .051$.

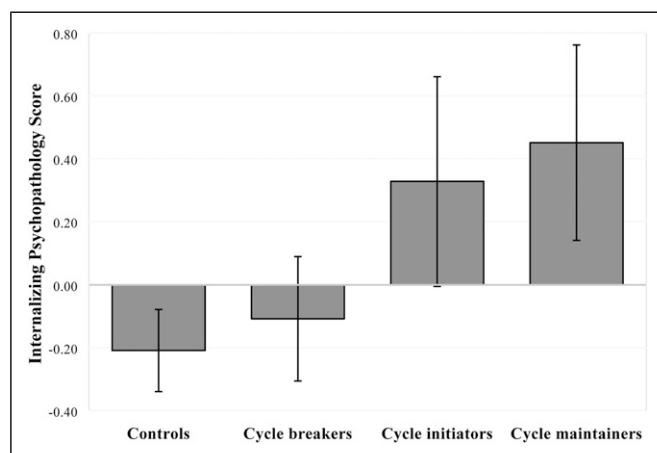


Figure 1. Bar Graph of Mean Internalizing Psychopathology in G3 Minors as a Function of Maltreatment Group. Note. Error bars represent 95% CI of SEs.

t-tests to account for unequal variances. We found that psychopathology scores were not significantly different between offspring of cycle breakers and offspring of controls ($-.11$ vs. $-.21$), $t(77) = .85$, $p = .400$, $d = .17$; thus, in the minor offspring, we did not find support for the *enduring risk* hypothesis that the effects of parental maltreatment would endure in the offspring generation even in the absence of offspring maltreatment. Consistent with the *buffering risk* hypothesis, we found that offspring of cycle breakers had lower psychopathology scores than offspring of cycle maintainers ($-.11$ vs. $.45$), $t(48) = 3.00$, $p = .004$, $d = .75$. Finally, we found no significant differences between psychopathology in offspring of cycle initiators and cycle maintainers ($.33$ vs. $.45$), $t(42) = .54$, $p = .595$, $d = .16$; thus, we did not find support for the *additive risk* hypothesis.

Planned Comparisons between G3 Adult Intergenerational Groups

We analyzed adult offspring data using the three a priori planned comparisons, with general psychopathology as the outcome variable. See Figure 2 and Table S11 (online Appendix S1) to view the group means for this analysis. Because a Levene Test found that the homogeneity of variance assumption had been violated, $p < .001$, we used Welch's *t*-tests to account for unequal variances. We found that the adult offspring of cycle breakers had significantly lower psychopathology scores than offspring of controls ($-.30$ vs. $-.05$), $t(304) = 2.34$, $p = .020$, $d = .26$; thus, we did not find support for the *enduring risk* hypothesis that the effects of parental maltreatment would endure in the offspring generation even in the absence of offspring maltreatment. In support of the *buffering risk* hypothesis, we found that adult offspring of cycle breakers had lower psychopathology scores than offspring of cycle maintainers ($-.30$ vs. $.28$), $t(262) = 4.28$, $p < .001$, $d = .51$. Finally, we found no significant differences

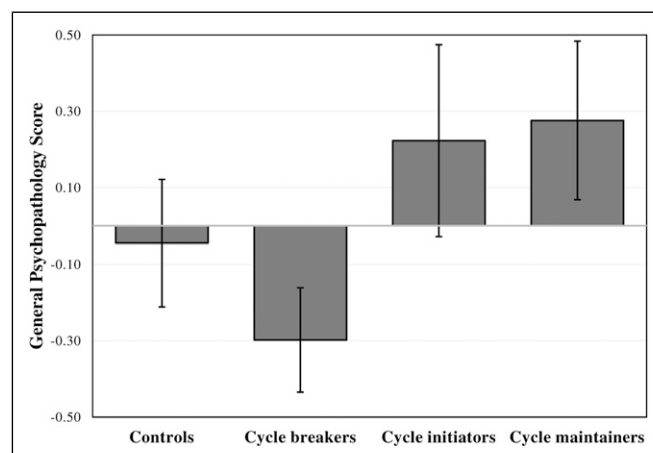


Figure 2. Bar Graph of Mean General Psychopathology in G3 Adults as a Function of Maltreatment Group. Note. Error bars represent 95% CI of SEs.

between psychopathology in offspring of cycle initiators and cycle maintainers ($.22$ vs. $.28$), $t(186) = .32$, $p = .748$, $d = .04$; thus, we did not find support for the *additive risk* hypothesis.

Discussion

In the present study, we sought to understand how intergenerational continuities and discontinuities in childhood maltreatment would affect offspring psychopathology. Data from a prospective, longitudinal study of multiple generations demonstrated support for the *buffering risk* hypothesis—that is, offspring of cycle breakers were buffered from risk for psychopathology, despite their parents' histories of childhood abuse and neglect. We found that both minor and adult offspring of cycle breakers reported significantly less psychopathology than offspring of cycle maintainers. Additional support for the *buffering risk* hypothesis was demonstrated by the fact that levels of psychopathology were as low (or lower) for the offspring of cycle breakers as the offspring of controls.

The *buffering risk* hypothesis is plausible, given findings from other studies showing that cycle breakers have fewer of the characteristics that typically confer risk for psychopathology than cycle maintainers, including low SES, poor parenting practices, or their own histories of psychopathology (Dixon et al., 2009; Jaffee et al., 2013). The unanticipated finding that cycle breakers may confer even less risk for offspring psychopathology than controls might speak to more intentional positive parenting practices that these individuals engage in due to their own experiences of abuse and neglect. Consistent with this possibility, Jaffee et al. (2013) found that cycle breakers expressed more maternal warmth than cycle maintainers, comparable to amounts expressed by controls. Others, however, have found that cycle breakers made more negative attributions for their children's behavior and were less sensitive and supportive than control parents (Dixon et al.,

2009). These studies differed in a number of ways, including the developmental periods during which children were assessed (infancy vs. middle childhood), the methods of assessing parenting practices (parent self-report vs. parent speech samples), and outcomes of interest. It may be that offspring psychopathology is most sensitive to certain aspects of parenting during particular developmental periods.

Our results did not yield support for the *enduring risk* or *additive risk* hypotheses. A parent's history of maltreatment did not increase risk for psychopathology in the absence of maltreatment in the offspring generation (as demonstrated by the comparison of cycle breakers and controls), nor were levels of psychopathology lower if only offspring were maltreated than if there was intergenerational transmission of maltreatment (as demonstrated by the comparison of cycle initiators and maintainers). Generally, our findings suggest that one's own experiences of maltreatment during childhood are associated with psychopathology outcomes above and beyond parental histories of childhood maltreatment. When parents have histories of maltreatment, risk for offspring psychopathology is only pronounced when offspring are abused or neglected. These results are consistent with studies that have found that childhood maltreatment is the most salient predictor of psychopathology when accounting for parental maltreatment and demographic characteristics (Bosquet Enlow et al., 2018), and parental maltreatment ceases to directly predict offspring psychopathology when accounting for these factors (Bifulco et al., 2002).

Implications

Our findings have relevant implications for further development of maltreatment prevention efforts. Given that we found support for the *buffering risk* hypothesis but not the *enduring risk* hypothesis, suggesting that children's mental health is most sensitive to their own experiences of maltreatment in the context of intergenerational transmission, efforts should focus on better understanding which families are at highest risk for continuing and initiating maltreatment. These efforts can help develop better recruitment methods that can more precisely identify these families for targeted prevention programs and thus not only prevent maltreatment but also protect children's mental health. Many current approaches attempt to prevent future abuse and neglect after families have already been in contact with child welfare services (Slack & Berger, 2020). In order to identify at-risk families at an earlier stage, more prospective, longitudinal studies are needed to identify risk and protective factors that differentiate parents who go on to become cycle breakers from those who become cycle maintainers—as well as factors that differentiate controls from cycle initiators—so that these factors may be specifically targeted in prevention efforts.

Other studies suggest that socioeconomically disadvantaged families are at greater risk for continuities in

maltreatment, and some quasi-experimental studies suggest a causal relationship between economic hardship and child maltreatment (Conrad-Hiebner & Byram, 2020). As such, a number of community response maltreatment prevention programs provide families with financial resources (e.g., cash benefits; Slack & Berger, 2020), as families reported to child protective services most often cite economic stressors as their primary concern. However, these programs show limited effectiveness in reducing risk for maltreatment (Fortson et al., 2016). Given the potentially complex interactions between risk factors that may impact maltreatment outcomes, prevention programs that are multifaceted in identifying and targeting risk factors at the individual family level, community level, and societal level are needed to best address multiple sources of risk (Harden et al., 2020).

Moreover, targeting prevention programs on the basis of socioeconomic disadvantage may miss a large number of families who will engage in maltreatment. In our own sample of minor offspring (for whom parental SES was reported), exploratory analyses revealed that cycle breakers and cycle maintainers reported comparable SES, as did controls and cycle initiators (see Table 2). This highlights the difficulty in using SES to identify families at risk for child abuse and neglect. Given the limited effectiveness of targeted prevention programs that recruit families based on specific risk factors (e.g., parenting or low income) and given the heterogeneity of risk factors for child maltreatment at various levels of environmental systems (family, community, and society), an alternative approach to ensure that prevention efforts are made available to all at-risk families prior to maltreatment is the implementation of tiered prevention approaches. These approaches begin with universal prevention efforts, after which families who seem likely to benefit from more focused efforts are referred to targeted, intensive prevention services such as those discussed above (Dodge, 2020). This may prove to be a cost-effective approach that maximizes reach; Dodge et al. (2014) found that when piloting Family Connects, a home visitation program, low-income families were more likely to participate if the program was offered universally, rather than if they were specifically targeted. Targeting high-risk populations may cause stigmatization of program participation and discourage families from joining. Universal recruitment strategies may thus be more effective in enrolling families at greatest risk. Several tiered prevention approaches that combine universal reach with targeted interventions, including the Family Connects program (Dodge et al., 2014; Dodge & Goodman, 2019) and Triple P (Prinz et al., 2009), have demonstrated efficacy in reducing rates of child maltreatment. Additionally, reviews of universal child maltreatment prevention programs including Triple P have found that such programs not only protect, but actually *improve*, both participating parents' and children's mental health through the reduction of internalizing and

externalizing symptoms (Altafim & Linhares, 2016; Branco et al., 2021).

Limitations and Future Directions

A considerable limitation of the present study is the use of discrepant measures of abuse and neglect in the parent and offspring generations. Court-substantiated records of maltreatment for parents and self-report measures of maltreatment for offspring may not be directly comparable due to differing severity of cases identified and inconsistent definitions of what constitutes abuse and neglect. It is possible that if we had been able to assess abuse and neglect in the offspring generation with court-substantiated records, some of the cycle maintainers in this study may have instead been classified as cycle breakers due to more stringent criteria. Similarly, if we could assess abuse and neglect in the parent generation with self-report measures, some of the cycle initiators in this sample may instead have been classified as cycle maintainers. Thus, our results require replication in a sample that uses similar methods to assess abuse and neglect in each generation. Further, the records of maltreatment for parents were limited to maltreatment occurring before the age of 12 and did not account for any maltreatment that might have occurred later in adolescence. Danese and Widom (2020) found that subjective self-report measures of maltreatment are more predictive of psychopathology outcomes than court-substantiated records, which is consistent with our findings. It may be that these associations would be observed cross-generationally as well if self-reports or court records were used in both generations, although this was unfortunately not possible here. Future research may examine whether self-reported subjective parental experiences of maltreatment are predictive of offspring psychopathology even when accounting for self-reported offspring maltreatment.

Another limitation is that we cannot assess causality in the current design, as our analyses cannot determine directional relationships. It could be that offspring who are predisposed to experience psychopathology are more likely to elicit negative parenting behaviors, including abuse and neglect (e.g., Dinkler et al., 2017). In contrast, other studies have shown that although aggressive and difficult-to-manage child behaviors elicit harsh physical discipline, they do not elicit maltreatment (Jaffee et al., 2004). That being said, we *can* conclude that, in our sample, parental maltreatment alone does not result in greater offspring psychopathology because parental experiences of childhood maltreatment occurred before offspring were born.

Our study was also limited by our indicators of psychopathology, as data were only collected on internalizing disorders and substance use. It may be that parental experiences of childhood maltreatment are significantly associated with offspring conduct problems and thought disorders. A previous study found that maternal experiences of childhood maltreatment predicted adolescent offspring antisocial behavior,

but not adolescent depression (Plant et al., 2013); this may also explain why we did not find a main effect of parental maltreatment in this sample. Future studies may expand on these findings by examining intergenerational effects of childhood maltreatment on offspring symptoms of conduct and thought disorders.

Future studies may also expand on our findings by examining the cumulative effects of features of maltreatment, such as developmental timing, chronicity, and severity, on offspring psychopathology. A number of studies suggest that these features of maltreatment have greater explanatory power than specific maltreatment subtypes, as they are more relevant to variability in individual stress responses (Smith & Pollak, 2020). Furthermore, multi-type maltreatment is common and is associated with greater severity of outcomes than individual subtypes (Bartlett et al., 2017). Future studies may attempt to develop more continuous measures of maltreatment intensity informed by assessments of timing, chronicity, and severity in order to better identify youth at substantial risk for psychopathology.

Further studies are also needed to determine which parenting aspects are relevant in the intergenerational continuity of maltreatment, whether cycle breakers are in fact engaging in more positive parenting practices than controls, and when in children's development certain practices carry most risk for offspring psychopathology. Many prevention programs focus on improving parenting skills through home visits, educational campaigns, or behavioral parenting training programs; however, these programs only show small to moderate effects in reducing risk for maltreatment (Chen & Chan, 2016). Thus, better understanding the developmental timing effects of specific parenting behaviors that predict risk for both maltreatment and psychopathology may lead to more focused and effective prevention efforts.

Finally, future research should explore the relative contributions of maltreatment and familial adversities on offspring mental health, as well as temporal associations between these phenomena, as effects of maltreatment and other types of adversity (e.g., poverty) are difficult to distinguish. There is some preliminary evidence that heightened adversities such as emotional stressors mediate the association between parental maltreatment and offspring maltreatment (Negriff et al., 2020). This further supports the notion that adversities other than economic hardship may be relevant in predicting risk for offspring maltreatment, and multifaceted and/or tiered universal prevention approaches should be employed.

Despite the limitations of the present study, there are a number of strengths in this design. While many other studies in the maltreatment literature are cross-sectional, rely on solely self-report measures of maltreatment, and assess only maternal histories of abuse and neglect, this study includes an unambiguous operationalization of abuse and neglect in the G2 sample through official records, a control group that was closely matched based on multiple demographic characteristics, and prospective assessments to follow-up on long-term consequences

of both maternal and paternal childhood maltreatment. Though we may not be able to generalize to all types of psychopathology, our findings are still informative in understanding how specific intergenerational patterns in the continuity and discontinuity of childhood maltreatment carry risk for internalizing psychopathology and substance use outcomes in later generations. Another strength of this study is the novel approach taken to directly compare the severity of psychopathology between offspring of cycle maintainers, cycle breakers, cycle initiators, and controls. This approach allowed us to specifically evaluate consequences of discontinuities and continuities in intergenerational maltreatment and examine potential additive effects of maltreatment across multiple generations. Further, given that the majority (77%) of our offspring sample were adults, we were able to examine the long-term developmental effects of childhood maltreatment in the prior generation.

Conclusion

The present study contributes to our understanding of how parental experiences of childhood abuse and neglect confer risk for adverse mental health outcomes in offspring. Our results suggest that, above and beyond parental histories of childhood maltreatment, a person's own history of childhood maltreatment predicts that person's psychopathology outcomes. Discontinuities in intergenerational maltreatment appear to protect offspring from risk for psychopathology. These findings have the potential to inform how early intervention efforts can best serve families who are at greatest risk for offspring experiencing psychopathology, and such interventions may carry protective effects throughout individuals' lives and into future generations.

Authors' Note

The opinions, findings, and conclusions or recommendations expressed in this paper are those of the authors and do not necessarily reflect those of the funding agencies.

Declaration of conflicting interests

The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

Funding

This research was supported in part by grants from the Eunice Kennedy Shriver National Institute of Child Health and Human Development (HD40774), the National Institute of Justice (86-IJ-CX-0033 and 89-IJ-CX-0007), the National Institute of Mental Health (MH49467 and MH58386), the National Institute on Drug Abuse (DA17842 and DA10060), the National Institute on Alcohol Abuse and Alcoholism (AA09238 and AA11108), the National Institute on Aging (AG058683) and the Doris Duke Charitable Foundation.

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Supplemental Material

Supplemental material for this article is available online.

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