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Safe, Stable, Nurturing Relationships Break the Intergenerational Cycle of Abuse: A Prospective Nationally Representative Cohort of Children in the United Kingdom

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A B S T R A C T

Purpose: To identify contextual and interpersonal factors that distinguish families in which the intergenerational transmission of maltreatment is maintained from families in which the cycle is broken.
Methods: The sample was composed of 1,116 families in the United Kingdom who participated in the Environmental Risk (E-Risk) Longitudinal Twin Study. We assessed mother's childhood history of maltreatment retrospectively with a validated and reliable interview. Prospective reports of children's physical maltreatment were collected repeatedly up to 12 years. We compared families in which mothers but not children had experienced maltreatment with families in which both mothers and children had experienced maltreatment, and with families without maltreatment, on a range of contextual and interpersonal factors known to affect child development.
Results: In multivariate analyses, supportive and trusting relationships with intimate partners, high levels of maternal warmth toward children, and low levels of partner violence between adults distinguished families in which mothers but not children experienced maltreatment from families in which mothers and children experienced maltreatment. Families in which only mothers experienced maltreatment were largely similar to families in which neither generation experienced maltreatment, except that mothers belonging to the former group were more likely to have a lifetime history of depression and low levels of social support.
Conclusions: Safe, stable, nurturing relationships between intimate partners and between mothers and children are associated with breaking the cycle of abuse in families. Additional research is needed to determine whether these factors have a causal role in preventing the transmission of maltreatment from one generation to the next.

IMPLICATIONS AND CONTRIBUTION

Safe and nurturing relationships between intimate partners and between mothers and children distinguished families in which the intergenerational transmission of maltreatment is maintained from families in which the cycle is broken. Our findings emphasize the potential benefit of supporting mothers with a history of childhood abuse to foster safe, stable, nurturing relationships to prevent future abuse of their children.

There is a widespread belief dating back to the 1960s [1] that "abuse breeds abuse"—that children who are victims of maltreatment in turn grow up to become abusive and neglectful parents. Despite such beliefs, the intergenerational transmission of abuse is not inevitable [2–5]. Methodologically rigorous studies have demonstrated that although children whose parents

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have a history of abuse or neglect are at elevated risk of experiencing maltreatment themselves, the cycle of abuse is not perpetuated in most families [6–11]. Estimates of the continuity of maltreatment across generations range from 7% [7] to 60% [12], depending on the length of follow-up, the credibility of measurement, and the composition of the sample.

Studies have identified numerous factors that contribute to the cycle of abuse. Compared with women who were not maltreated as children, those who have a history of maltreatment tend to become parents at a younger age, have more mental health problems, be more likely to reside with a violent adult [7], and have more substance use problems [13]. They also report more social isolation, respond more aggressively to ambiguous social cues [6], and make more negative attributions about their children's behavior [7].

Other studies have identified conditions under which the intergenerational cycle of abuse is broken. Distinguishing families in which the cycle of abuse is perpetuated from families in which it is not has identified implications for the prevention of maltreatment. For example, families in which the cycle of abuse is broken are ones where mothers have more social support [14,15] and fewer serious financial problems compared with families in which the cycle is maintained [14]. Interpersonal relationships with other adults that are characterized by warmth, trust, and support have been identified as key factors in breaking the cycle of abuse in other studies. These include socially supportive relationships with an adult during childhood [12], high-quality attachment to a primary caregiver in childhood [11], a relationship with a therapist, and an emotionally supportive relationship with an intimate partner in adulthood [12]. Improving the quality of parents' relationships with their own children may also prevent the transmission of maltreatment across generations [16]. Pears and Capaldi [9] found that in families in which parents were consistent in their use of discipline, the parents' history of abuse was no longer predictive of their child's experience of maltreatment.

Some studies have also found that families in which the cycle of abuse is broken are characterized by fewer contextual risk factors than families in which the cycle is maintained, including lower levels of life stress (particularly related to interpersonal difficulties with family members), fewer symptoms of depression and anxiety [12] and healthier infants [15]. Dixon et al. [14] also observed a trend for families in which the cycle of abuse was broken (vs. maintained) to report lower levels of stressful life events. It is unclear exactly how low levels of contextual risk are in families where the cycle of abuse is broken. One possibility is that these families are similar to those in which neither parents nor children have ever experienced maltreatment. Another possibility is that families characterized as cycle breakers experience relatively high levels of contextual risk, but not so high as to increase the odds that the experience of maltreatment will be transmitted across generations.

Building on this research, we used data from a nationally representative sample of families in the United Kingdom (UK) to estimate the magnitude of the intergenerational transmission of maltreatment and to identify factors that distinguished families in which the cycle of abuse was broken from families in which it was maintained. We identified three groups of families: (1) those in which neither mothers nor children had experienced maltreatment (controls), (2) those in which mothers had a history of maltreatment and children did not (cycle breakers), and (3) those in which mothers and children had experienced maltreatment (cycle maintainers). We tested the hypothesis that cycle breakers would be families in which mothers reported more socially supportive relationships and fewer contextual negative factors than cycle maintainers. We also report comparisons between controls and cycle breakers. Like the other studies included in this special issue, ours is one of a few that include information on both mother's and children's history of maltreatment and provide an international comparison on the intergenerational transmission of violence.

Methods

Sample

Participants were members of the Environmental Risk (E-Risk) Longitudinal Twin Study, which tracks the development of a birth cohort of 2,232 British children. The sample was drawn from a larger birth register of twins born in England and Wales in 1994–1995 [17]. Full details about the sample are reported elsewhere [18]. Briefly, the E-Risk sample was constructed in 1999–2000, when 1,116 families with same-sex 5-year-old twins (93% of those eligible) participated in home-visit assessments. Families were recruited to represent the UK population of families with newborns in the 1990s, based on (1) residential location throughout England and Wales, and (2) mother's age (i.e., older mothers having twins via assisted reproduction were under-selected and teenage mothers with twins were over-selected). We used this sampling to replace high-risk families who were selectively lost to the register via nonresponse and to ensure sufficient numbers of children growing up in high-risk environments. Follow-up home visits were conducted when the children were aged 7 years (98% participation), 10 years (96% participation), and 12 years (96% participation). Parents gave informed consent and children gave assent. Ethical approval was granted by the Joint South London and Maudsley and the Institute of Psychiatry NHS Ethics Committee.

Maltreatment measures

Mother. We interviewed mothers about their history of childhood maltreatment using the Childhood Trauma Questionnaire (CTQ) [19]. This instrument inquires about five categories: emotional, physical, and sexual abuse, and also emotional and physical neglect. The validity of the instrument has been previously demonstrated in clinical and community samples [20]. We used the score classification evaluated and recommended by the CTQ manual [20] and considered a specific category of maltreatment present if the mothers had a moderate to severe score. Subsequently, we derived a cumulative exposure index for each woman by counting the number of maltreatment categories present: 75.5% of women experienced no maltreatment, 16.8% experienced mild forms of maltreatment (one to two categories), and 7.7% experienced severe maltreatment (three categories). For this article, we counted any maltreatment (24.5%).

Child. We assessed physical maltreatment by an adult [21] using a standardized clinical interview protocol designed to enhance mothers' comfort with reporting valid child maltreatment information, while also meeting researchers' responsibilities for referral under the UK Children Act. No family has left the study after intervention. When mothers reported any maltreatment,

interviewers followed with standardized probes (e.g., accidental harm was ruled out; harm by age peers was coded as bullying, not maltreatment). Sexual abuse was queried directly. Over the years of data collection, the study maintained a cumulative dossier for each child, composed of recorded debriefings with interviewers who had coded any indication of maltreatment at any of the four successive home visits, recorded narratives of the four successive caregiver interviews at child ages 5, 7, 10, and 12 years (covering the period from birth to 12 years), and information from clinicians whenever the study made a referral. Based on review of each child's cumulative dossier, two clinical psychologists (T.E.M. and the project coordinator) reached consensus for whether physical maltreatment had occurred. Examples of maltreatment in E-Risk children included the following: The mother smacked the child weekly, leaving marks or bruises; child was repeatedly beaten by a young adult stepsibling; child was routinely smacked by father when drunk, "just to humiliate him"; child was fondled sexually and often slapped by the mothers' boyfriend. Many, but not all, cases identified in the course of our research were under investigation by police or social services, already on the child-protection register, or in foster care at follow-up, having been removed from their parents because of abuse. For this article, we examined children who experienced probable (15.4%) or definite (5.7%) physical maltreatment. This group included a small number of children who were sexually abused, a third of whom were also physically maltreated.

Contextual and interpersonal correlates of abuse

Table 1 lists the measures used to test each hypothesis about the correlates that could contribute to breaking or maintaining the cycle of abuse. The table provides information about each measure, its source, and the age at which it was obtained. For some of these measures, we tested whether the high and the low ends of the measure (e.g., high social support versus lower levels of social support) were differentially associated with a child's risk of maltreatment or a mother's history of maltreatment. This approach was consistent with evidence that high versus low levels of the same risk factor can be uniquely predictive of outcomes such as adolescent antisocial behavior [22].

Statistical analysis

First, we conducted logistic regression analyses to test whether families in which mothers had a history of abuse were at elevated risk of being families in which at least one of the twins also had a history of maltreatment. Second, we conducted logistic regression analyses in which we tested whether a variety of contextual and interpersonal factors were independently predictive of mothers' history of abuse and children's experience of maltreatment. Third, we conducted multinomial logistic regression analyses to distinguish (1) families characterized as cycle maintainers from families characterized as cycle breakers, and (2) control families from families characterized as cycle breakers. Cycle breakers were the reference category. For both sets of comparisons, Model 1 presents the bivariate associations between each contextual or interpersonal factor while adjusting for child sex. Model 2 adjusted for child sex while simultaneously estimating the effects of all contextual and interpersonal factors, to identify their unique effects.

Results

Findings indicated substantial continuity of abuse from one generation to the next. Among the 178 mothers who reported a history of mild maltreatment in childhood, 46% (n = 81) had at least one twin child who experienced physical maltreatment by the time they reached the age of 12; for 54% (n = 97), both children escaped exposure to maltreatment. Results from logistic regressions indicated that mothers with a history of mild maltreatment were 3.55 times (95% confidence interval, 2.52–5.01) more likely to have at least one child who experienced physical maltreatment compared with mothers who did not have a history of childhood abuse. Among the 81 mothers who reported a history of severe abuse in childhood, 56% (n = 45) had at least one twin child who experienced physical maltreatment and 44% (n = 36) had children who were not maltreated. Mothers who experienced severe abuse in their childhood were 5.31 times (95% confidence interval, 3.31–8.52) more likely to have at least one child who was physically maltreated by the age of 12 years. A total of 646 families (71.4% of the families included in this study) did not experience maltreatment in either generation (controls), whereas 126 (13.9%) experienced maltreatment across two generations (cycle maintainers). In 133 families (14.7%), only mothers experienced maltreatment (cycle breakers).

Do contextual and interpersonal factors differentiate maltreated versus non-maltreated mothers and children?

Regarding factors that could contribute to maintaining the cycle of abuse (Table 2), logistic regression analyses showed that all were independently associated with mothers' history of maltreatment and all but one were associated with children's experience of physical maltreatment. Socioeconomic disadvantage, mothers' or their partners' mental health problems, domestic partner violence, and mothers' low social support distinguished mothers who were abused and/or neglected in childhood from those who were not, and also children who were physically maltreated from those who were not. Low levels of neighborhood collective efficacy distinguished mothers who were maltreated in childhood from those who were not, but did not distinguish maltreated from non-maltreated children.

Regarding factors that could contribute to breaking the cycle of abuse (Table 2), logistic regression analyses showed that except for high neighborhood collective efficacy, all other factors were negatively associated with a history of abuse among mothers or children. High sibling warmth, a healthy relationship with a partner, socioeconomic advantage, and mothers' high social support reduced the odds that mothers and children had a history of maltreatment. In addition, high maternal warmth reduced the odds that children (but not mothers) had a history of maltreatment.

Do contextual and interpersonal factors differentiate cycle maintainers versus cycle breakers?

We conducted multinomial logistic regression analyses to test whether contextual and interpersonal factors differentiated cycle maintainers from cycle breakers (comparisons between control families and cycle breakers are presented in the next section). As shown in Table 3 (Model 1), all factors that could contribute to maintaining the cycle of abuse distinguished families

Table 1
Measures of contextual and interpersonal factors

Factors	Measures	Children's age at assessment	Informant	Negative/Positive	Reference citations
Socioeconomic status	Standardized composite of income, education, and social class modeled on British Social Attitudes survey series	5	Mother	Bottom tertile/ Top tertile	29
Mother's lifetime depression	Assessed using modified version of Diagnostic Interview Schedule when twins were 5 years	5	Mother	Diagnosis according to DSM-4 criteria	30
Parent's substance use	Questions about drug and alcohol problems taken from short Michigan Alcoholism Screening Test and from Drug Abuse Screening Test. These measures capture mothers' and fathers' problems with alcohol	5	Mother	Either four symptoms for mothers or five symptoms for fathers	31,32
Parent's antisocial personality	Father's and mother's history of antisocial behavior were reported using the Young Adult Behavior Checklist, modified to obtain lifetime data and supplemented with questions from Diagnostic Interview Schedule	5	Mother	Either parent had three or more antisocial personality symptoms	30,33,34
Domestic partner violence	Mothers were asked about their own violence toward any partner and about partners' violence toward them during 5 years since twins' birth using Conflict Tactics Scale, Form R.	5	Mother	At least one act of violence between partners	19,35
Mothers' social support	Three components of social support: (1) financial support (whether financial support was provided in times of need), (2) support with twins (how much help was provided with taking care of twins in times of need), and (3) emotional support (how much support was provided when mother was upset or worried, or needed someone to talk to)	5	Mother	Bottom tertile/ Top tertile	36
Neighborhood collective efficacy	Postal survey sent to 15 households in same postal code as each of E-Risk families. Responses were aggregated across neighbors' surveys and linked to each E-Risk family	7	Neighbors	Bottom tertile/ Top tertile	37
Sibling warmth	Questions about quality of children's relationship with one another, including "Do your twins love each other?" and "Do both your twins do nice things for each other?"	7	Mother	Bottom tertile/ Top tertile	38
Maternal warmth	Maternal expressed emotion scale based on 5-minute speech sample method	5	Two raters	Bottom tertile/ Top tertile	39
Healthy partner relationship	Emotional intimacy assessed with three items such as "We feel very close to each other," "I feel that I can trust my partner completely," and "We discuss problems and feel good about the solutions"	5	Mother	Bottom tertile/ Top tertile	35,40

DSM-IV = Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition.

characterized as cycle maintainers from the cycle breakers, except for mothers' low social support and low neighborhood collective efficacy. When these negative factors were entered simultaneously (Model 2), only domestic violence between mother and her partner(s) was associated with increased probability that the cycle of abuse would be maintained rather than broken; the odds of being cycle maintainers versus cycle breakers were over two times greater in families in which domestic partner violence was present rather than absent.

Turning to factors that could contribute to breaking the cycle of abuse, socioeconomic advantage, high maternal warmth and mother's healthy relationship with a partner distinguished

Table 2
Prevalence of mothers' and children's maltreatment, according to contextual and interpersonal factors that independently contribute to maintaining or breaking cycle of abuse

	Mothers' maltreatment			Children's maltreatment		
	Yes n (%)	No n (%)	Odds ratio (95% CI)	Yes n (%)	No n (%)	Odds ratio (95% CI)
Negative factors						
Socioeconomic disadvantage	118 (45.6)	235 (29.5)	**2.00 (1.50–2.67)**	235 (49.8)	507 (28.8)	**2.45 (1.87–3.22)**
Mother's lifetime depression	131 (50.8)	240 (30.1)	**2.39 (1.80–3.19)**	231 (49.2)	549 (31.2)	**2.13 (1.62–2.79)**
Parent's substance use	105 (40.7)	162 (20.4)	**2.68 (1.98–3.63)**	196 (42.0)	370 (21.1)	**2.71 (2.04–3.59)**
Parent's antisocial personality	108 (41.7)	179 (22.5)	**2.46 (1.83–3.32)**	230 (49.0)	384 (21.9)	**3.44 (2.61–4.54)**
Domestic partner violence	150 (58.4)	292 (36.8)	**2.41 (1.81–3.20)**	305 (65.6)	633 (36.1)	**3.37 (2.55–4.47)**
Mothers' low social support	134 (51.7)	199 (25.0)	**3.22 (2.41–4.31)**	218 (46.2)	494 (28.1)	**2.20 (1.67–2.89)**
Low neighborhood collective efficacy	93 (37.1)	216 (27.7)	**1.53 (1.14–2.07)**	142 (30.9)	504 (29.4)	1.07 (.80–1.44)
Positive factors						
Socioeconomic advantage	62 (23.9)	296 (37.1)	**.53 (.39–.73)**	109 (23.1)	643 (36.5)	**.52 (.38–.71)**
High sibling warmth	103 (40.6)	417 (53.3)	**.60 (.43–.80)**	181 (39.1)	899 (52.7)	**.58 (.44–.76)**
High maternal warmth	70 (29.5)	225 (32.1)	.88 (.64–1.22)	91 (21.8)	531 (34.0)	**.54 (.38–.76)**
Healthy partner relationship	56 (21.6)	320 (40.1)	**.41 (.30–.57)**	108 (22.9)	696 (39.6)	**.45 (.33–.62)**
Mothers' high social support	65 (25.1)	382 (47.9)	**.36 (.27–.50)**	139 (29.5)	805 (45.8)	**.49 (.37–.66)**
High neighborhood collective efficacy	74 (29.5)	249 (32.0)	.89 (.65–1.21)	133 (28.9)	543 (31.6)	.88 (.65–1.18)

Significant associations are reported in bold; percentages were calculated based on 1,116 mothers for mothers' maltreatment and 2,232 children for children's maltreatment. Robust standard errors were used in models that estimated the association between children's history of maltreatment and contextual and interpersonal factors to adjust for the clustering of twins within families.
CI = confidence interval.

Table 3
Comparisons between cycle breakers and cycle maintainers, and controls, showing sex-adjusted associations between each contextual and interpersonal factor and intergenerational maltreatment (Model 1) and controlling for all other factors (Model 2)

Covariates	Comparisons between cycle breakers and cycle maintainers		Comparisons between cycle breakers and controls	
	Model 1	Model 2	Model 1	Model 2
	Adjusted OR (95% CI)	Adjusted OR (95% CI)	Adjusted OR (95% CI)	Adjusted OR (95% CI)
Negative factors				
Socioeconomic disadvantage	**2.71 (1.63–4.49)**	1.76 (.99–3.10)	.71 (.48–1.06)	1.09 (.69–1.72)
Mother's lifetime depression	**1.68 (1.02–2.74)**	1.35 (.79–2.31)	**.48 (.33–.70)**	**.58 (.39–.87)**
Parent's substance use	**3.04 (1.81–5.11)**	1.73 (.95–3.14)	**.56 (.37–.87)**	.72 (.44–1.17)
Parent's antisocial personality	**2.92 (1.75–4.88)**	1.41 (.76–2.64)	**.53 (.35–.81)**	.81(.48–1.34)
Domestic partner violence	**2.97 (1.77–5.00)**	**2.21 (1.23–3.99)**	**.55 (.37–.80)**	.69 (.45–1.07)
Mothers' low social support	1.62 (.99–2.65)	1.50 (.89–2.53)	**.35 (.24–.52)**	**.37 (.25–.56)**
Low neighborhood collective efficacy	.94 (.56–1.58)	.68 (.39–1.18)	**.64 (.43–.95)**	.71 (.47–1.09)
Positive factors				
Socioeconomic advantage	**.45 (.25–.82)**	.54 (.29–1.02)	1.42 (.95–2.12)	1.44 (.93–2.22)
High sibling warmth	.72 (.43–1.19)	.98 (.57–1.68)	**1.57 (1.07–2.30)**	1.43 (.95–2.16)
High maternal warmth	**.39 (.22–.71)**	**.48 (.26–.88)**	.83 (.56–1.24)	.68 (.44–1.04)
Healthy partner relationship	**.42 (.22–.78)**	**.50 (.26–.96)**	**1.82 (1.21–2.74)**	1.53 (.99–2.36)
Mothers' high social support	1.02 (.58–1.79)	1.01 (.55–1.86)	**3.16 (2.07–4.83)**	**2.82 (1.81–4.41)**

Significant associations are reported in bold.
CI = confidence interval; OR = odds ratio.

families characterized as cycle breakers from the cycle maintainers (Table 3). When considered simultaneously in multivariate analyses, both high maternal warmth and mother's intimate relationship with a partner were associated with a decreased risk that the cycle of abuse would be maintained rather than broken.

Do contextual and interpersonal factors differentiate controls versus cycle breakers?

As shown in Table 3 (Model 1), multinomial logistic regression models indicated that, compared with the cycle breakers, controls were less likely to be characterized by most of the negative contextual and interpersonal factors and more likely to be characterized by most of the positive ones. Controlling for all negative factors simultaneously, however (Model 2), the only differences that remained significant were that controls were less likely than cycle breakers to have had depression and to have low social support. When controlling simultaneously for all positive factors (Model 2), the only difference that remained significant was that controls were more likely than cycle breakers to have high levels of social support.

Discussion

Data from a prospective, longitudinal study of mothers and children showed continuity in the experience of maltreatment across two generations. The odds of a child experiencing physical maltreatment were three to five times greater among mothers who had a history of abuse or neglect compared with mothers without such a history, depending on the severity of the mother's experiences. Mothers who had a history of abuse or neglect were also characterized by high levels of negative and low levels of positive factors, including high levels of social disadvantage, mental health problems, domestic partner violence, and low levels of healthy partner relationships and other socially supportive relationships. Children who experienced physical maltreatment—whether or not their mothers had a history of abuse or neglect—were similarly exposed to these same contextual and interpersonal factors. These results are consistent with the notion that abuse and neglect are "toxic stressors," with long-term implications for health and behavior [23].

Although there was significant continuity in the experience of maltreatment across generations, the cycle of abuse was broken in approximately half of the families in which mothers reported a history of abuse or neglect. These cycle breakers could be distinguished from the cycle maintainers in a number of domains. Compared with the cycle breakers, the cycle maintainers reported higher rates of depression, substance use problems, antisocial behavior, domestic partner violence, and social disadvantage. In multivariate analyses controlling for all negative factors, mothers who experienced domestic partner violence were uniquely at elevated risk of being cycle maintainers versus cycle breakers. Furthermore, the cycle maintainers were less warm with their children, described their relationships with intimate partners as less trusting and close, and were less socially advantaged. Conversely, in multivariate analyses, mothers who reported healthy relationships with partners and who expressed high levels of maternal warmth were significantly less likely to be cycle maintainers than cycle breakers. Families in which the cycle of violence was broken (vs. maintained) were ones in which mothers were safe (i.e., less likely to report domestic violence) and in which relationships between mothers and children and mothers and their partners were nurturing.

Three other findings bear noting. First, cycle breakers and women who did not reported a history of maltreatment and whose children did not experience maltreatment (i.e., "controls") did not differ in the degree to which they expressed warmth about their children or in the degree to which they reported trusting and supportive relationships with intimate partners. However, the cycle breakers were significantly more likely than controls to have ever been depressed and to have less socially supportive relationships in general. This suggests that cycle breakers were able to maintain not just non-abusive, but warm relationships with children despite their vulnerability to depression. It is possible that supportive partners specifically facilitate this process, given that cycle breakers versus controls

had access to fewer socially supportive relationships in general. Second, the factors that distinguished cycle breakers and cycle maintainers involved relationships with family members rather than relationships outside the family. For example, having relationships with neighbors characterized by trust and a sense of shared values (i.e., a sense of collective efficacy), did not distinguish cycle breakers from cycle maintainers. Indeed, the perception that neighbors shared values and could be trusted did not even differentiate maltreated from non-maltreated mothers or children. Although maltreatment tends to be concentrated in disadvantaged neighborhoods, there are relatively few studies that test whether neighborhood process measures such as collective efficacy account for between-family or between-neighborhood differences in maltreatment, and findings to date are mixed [24]. Moreover, neighborhood collective efficacy—unlike other covariates in our models—was not reported by mothers. It is possible that shared informant variance inflated associations between covariates other than neighborhood collective efficacy and cycle-of-abuse status. Third, some correlates of being a cycle breaker that were significant at the univariate level became non-significant in multivariate analyses comparing cycle breakers with maintainers and with controls (e.g., parents' antisocial personality). We note that the co-occurrence of these factors (e.g., parental mental health problems, socioeconomic disadvantage) with those that were identified as predictors of cycle maintenance (e.g., the mother's relationship with her partner) may increase the challenge of modifying the quality of relationships within the family.

It is not clear why cycle breakers were more likely than cycle maintainers to have formed relationships that were not only non-abusive, but also warm and supportive. One possibility is that cycle breakers actively seek to ensure their children will not become victims of maltreatment, and look for qualities in intimate partners that will help them break the cycle of abuse. This possibility raises the question of whether the relationship with an intimate partner is a causal mechanism in breaking the cycle of abuse, or whether women who choose relationship partners carefully are characterized by particular traits or behaviors that would help them break the cycle of abuse with or without a supportive partner. Observational, non-experimental data do not suffice to rule out this possibility.

Limitations

One limitation of our study was that mothers reported retrospectively on their own history of maltreatment. Individuals who provide retrospective reports have a tendency, on the one hand, to forget past events, and on other hand, to recall past events in ways that are congruent with their current mood or that make sense of their current circumstances [25]. However, retrospective reports as measured by the CTQ correspond highly with reports of an individual's abuse history based on other sources [26]. A second limitation is that our sample was composed of twins, and thus, we cannot be certain that our results generalize to singletons. Rates of probable or definite child maltreatment in our sample (21.1%) were roughly similar to lifetime prevalence rates of maltreatment as measured in the Developmental Victimization Survey, in which the lifetime prevalence of maltreatment was 15.1% in a nationally representative sample of 2- to 17-year-olds in the United States [27]. A third limitation is that we did not ask caregivers to identify the perpetrator of a child's abuse. Therefore, we could not strictly test the hypothesis stipulating that "abuse breeds abuse," because even in families in which there was continuity of maltreatment across generations, it was not clear whether the mother herself was the perpetrator of the child's abuse. Nevertheless, it may be useful to conceptualize the cycle of abuse in broader terms, recognizing that even when mothers who have a history of abuse or neglect are not themselves abusive or neglectful, they may be at elevated risk of exposing their children to other perpetrators of maltreatment. A fourth limitation is that children's experience of maltreatment was assessed via mothers who may have been prone to reporting biases [28]. However, findings from our study are consistent with findings from other studies in this issue that used official reports of children's maltreatment. A fifth limitation is that our study did not assess all children in a family, only the twins who participated in the E-Risk study. Therefore, we may have overlooked some cases of maltreatment in families we classified as controls or cycle breakers. It is also possible that some families that were classified as controls were actually cycle breakers because the biological father or the mother's partner had a history of maltreatment. Finally, we did not examine families in which mothers did not experience childhood maltreatment, but their children did. This group ($n = 152$ families) is likely to reveal interesting information about mechanisms involved in the emergence of new cases of child maltreatment despite the absence of such history in the mothers' childhood. These may also be families in which the biological father or the mother's partner had a history of maltreatment.

Clinical implications

Our findings have at least two important implications for prevention and intervention. First, efforts to prevent child maltreatment should target women who have histories of abuse or neglect, because their children are at elevated risk of experiencing physical maltreatment. Second, fostering safe, stable, nurturing relationships between mothers and their partners and between mothers and their children appears to be a key factor in breaking the cycle of abuse from one generation to the next. Thus, prevention studies—which are better designed to identify the causal role of safe, stable, nurturing relationships between partners—should not only support parents in engaging in warm, sensitive parenting, but should also evaluate the effects of fostering open communication and trust between mothers and their partners on breaking the cycle of violence.

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