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Profiles of Physical and Psychological Violence in Childhood as a Risk Factor for Poorer Adult Health: Evidence From the 1995-2005 National Survey of Midlife in the United States

Emily A. Greenfield[1] and Nadine F. Marks[2]

Abstract

Objectives: This study examined linkages between physical and psychological violence in childhood from parents and three dimensions of adult health (self-rated health, functional limitations, chronic conditions). **Methods:** Regression models were estimated using data from the 1995 and 2005 waves of the National Survey of Midlife in the U.S. Responses to an adapted

[1]Rutgers, the State University of New Jersey
[2] University of Wisconsin-Madison

Corresponding author:
Professor Emily A. Greenfield, Rutgers School of Social Work, 536 George St., New Brunswick, NJ 08901
Email: egreenf@ssw.rutgers.edu

version of the Conflict Tactics Scales in 1995 were used to code respondents into one of nine profiles of violence distinguished by types and frequency of violence. **Results:** Reports of both frequent physical and frequent psychological violence were associated with poorer health at baseline across the three dimensions of health, as well as with more severe declines in health across all three dimensions over the 10-year study period. **Discussion:** Results suggest that having experienced frequent physical and psychological violence in childhood is a risk factor for poorer adult health status and declining trajectories of health throughout adulthood.

Keywords

child abuse, health, chronic conditions, functional limitations, parent–child relationships, life course perspective

Empirical evidence regarding associations of risk between childhood adversity and adult health outcomes has burgeoned over the past few decades. Within gerontology-focused journals alone, scholars have documented that a variety of types of childhood conditions—including parental divorce, early parental death, and residence in a single-parent household—have implications for many aspects of individuals' health in adulthood (e.g., Crosnoe & Elder, 2004; Johnson & Barer, 2002; O'Rand & Hamil-Luker, 2005; Webster & Herzog, 1995; Wickrama, Conger, & Abraham, 2005). Given that child protective services agencies continue to investigate cases of maltreatment involving millions of children each year (U.S. Department of Health and Human Services, 2006), childhood family violence constitutes an additionally important type of adversity for research on the long-term health consequences of childhood experiences to address.

Studies that draw on diverse measures of childhood family violence indicate that, overall, individuals with histories of abuse in childhood are at greater risk for poorer health in adulthood than individuals without histories of abuse (for a review, see Springer, Sheridan, Kuo, & Carnes, 2003). Nevertheless, conceptual limitations of research in this area constrain full understanding of the extent to which childhood family violence operates as a risk factor for poorer adult health. Such limitations include studies' predominant focus on sexual abuse (e.g., Klonsky & Moyer, 2008), an emphasis on mental health in adulthood (Chartier, Walker, & Naimark, 2007), and examinations of individuals' health at a single time point in adulthood (Haas, 2008). Recognizing these limitations of previous research, and conceptualizing *violence* as a term inclusive of a range of behavioral

phenomena (Besharov, 1990), the purpose of this study was to use data from a U.S. national survey to examine linkages between profiles indicating diverse experiences of physical and psychological violence in childhood from parents and three aspects of physical health in adulthood (self-rated health, functional impairment, and chronic conditions). Drawing on a life-course perspective (Elder, Johnson, & Crosnoe, 2003), we investigated whether reports of various specific profiles of violence were associated with poorer adult health status, as well as with more severe declines in health across a 10-year period in adulthood.

Theoretical Background

The life course perspective—which has been developed from theories and concepts within several social scientific disciplines—provides a contextual, dynamic, and heterogeneity-based approach to studying continuity and change across people's lives (Elder et al., 2003). A primary insight of the perspective is that individuals' past experiences can cumulatively and interactively influence future outcomes through complex life histories, or sequences of experiences within interrelated life domains, such as paid work and family (Settersten, 2003). This general orientation to the interconnected nature of experiences across various points in an individual's life motivates attention to potential linkages between childhood family violence and adult health.

Theorists have posited an array of mechanisms through which experiences of child abuse, in particular, can jeopardize individuals' functioning well beyond childhood and into adulthood (Finkelhor, 1995; Kendall-Tackett, 2002). Focusing specifically on adult physical health, Kendall-Tackett posited four pathways through which child abuse can lead to poorer adult physical health, including (1) behavioral pathways (e.g., greater substance abuse, eating disorders, smoking), (2) social pathways (e.g., homelessness, revictimization), (3) cognitive pathways (e.g., problematic internal working model of attachment), and (4) emotional pathways (e.g., depression, post-traumatic stress disorder). These pathways, taken together, indicate several interconnected domains of individuals' complex life histories that might underlie linkages between childhood family violence and poorer adult health.

In addition to recognizing dynamic life-course histories that can contribute to an adult's present-day outcomes, the life course perspective also emphasizes the dynamic nature of these outcomes themselves, suggesting that an individual's functioning within a given domain—such as health—is aptly characterized by patterns of continuity and change over time (Elder,

1995). In this way, the life course perspective encourages attention to individuals' functioning at a single point in time, as well as to trajectories of functioning over extended periods of time.

Cumulative disadvantage theory is one area of life-course scholarship that focuses specifically on life-course trajectories (Dannefer, 2003). This theorizing refers to processes whereby disadvantages facing individuals at one point in time can lead to repeated exposure to further disadvantage after that time. This accumulation of disadvantage over time contributes to heightening inequalities in optimal outcomes between those who faced the initial conditions of disadvantage and those who did not (Zuckerman, 1998). Applying this theorizing to linkages between childhood family violence and adult health, the concept of cumulative disadvantage suggests that childhood family violence might lead to increasing inequalities in adult health over time, whereby individuals with histories of violence are likely to experience more rapid declines in health in contrast to individuals without such histories of violence.

Empirical Background

Much of the evidence regarding the long-term health consequences of children's experiences of family violence has been generated by studies using nonprobability samples of respondents recruited from treatment settings. These studies typically have focused on associations between childhood family violence and a specific health condition among individuals seeking medical attention, such as gastroenterological symptoms (Lesserman et al., 1997; Longstreth & Wolde-Tsadik, 1993) or chronic pain (Kendall-Tackett, Marshall, & Ness, 2003; Lampe et al., 2003). Results indicate that, overall, histories of physical and/or psychological violence from particular family members place individuals at greater risk for being diagnosed with a physical condition and having more severe symptoms.

Studies increasingly have drawn on data from larger community-based samples to assess linkages between childhood family violence and adult health. Focusing mostly on experiences of physical abuse in childhood, studies that have drawn on regional samples (Chartier et al., 2007; Romans, Belaise, Martin, Morris, & Raffi, 2002; Springer, Sheridan, Kuo, & Carnes, 2007; Walker et al., 1999; Williamson, Thompson, Anda, Dietz, & Felitti, 2002), as well as U.S. national samples (Sachs-Ericsson, Blazer, Plant, & Arnow, 2005; Shaw & Krause, 2002; Thompson, Arias, Basile, & Desai, 2002; Thompson, Kingree, & Desai, 2004), have indicated that reports of

physical violence in childhood are associated with poorer adult health. To our knowledge, only one study using data from a larger population sample has examined linkages between psychological violence and adult physical health (Irving & Ferraro, 2006). Results from this study were mixed. Reports of psychological abuse from only mothers or both parents were associated with poorer ratings of self-rated health among women only. Reports of psychological abuse from fathers were not associated with self-rated adult health among men or women.

The current study aimed to address several limitations of previous research on childhood family violence and adult health. First, although some population-based studies have considered the independent and cumulative effects of physical and sexual abuse (e.g., Romans et al., 2002), few studies have examined psychological violence as a potentially distinct or co-occurring type of violence. Furthermore, most population-based studies on the long-term health effects of childhood family violence largely have categorized respondents into dichotomous groups, with those who reported violence having occurred frequently and those who reported violence having occurred infrequently or not at all (e.g., Chartier et al., 2007; Irving & Ferraro, 2006). This analytic feature does not allow for testing linkages between childhood family violence and adult health at relatively lower frequency levels of family violence. Also, to our knowledge, all population-based studies on the long-term health consequences of childhood family violence have investigated only levels of adult health at a single time point in adulthood. Therefore, the extent to which childhood family violence serves as a risk factor for poorer trajectories of health across adulthood has not been adequately examined. Finally, much work in this area has focused on one health outcome at a time. Scholars in public health have suggested the value of conceptualizing and studying physical health as a multidimensional construct (Patrick & Erickson, 1993), where different dimensions of health can have somewhat different patterns of correlates. Therefore, it remains important to explore patterns of associations among childhood family violence and various dimensions of physical health—which allows for evaluating the extent to which particular aspects of adult health are especially sensitive to histories of childhood family violence.

Hypotheses

Guided by insights from the life course perspective and results of previous studies, we posited two hypotheses:

Hypothesis 1: Adults who reported having experienced diverse profiles of physical and psychological violence in childhood from parents would indicate poorer adult health status across three dimensions (poorer self-rated physical health, more functional limitations, and more chronic conditions) than respondents who reported not having experienced physical or psychological violence in childhood from parents.

Hypothesis 2: Adults who reported having experienced diverse profiles of physical and psychological violence in childhood from parents would demonstrate more severe declines in health across 10 years in adulthood (greater declines in self-rated physical health, greater increases in functional limitations, and greater increases in chronic conditions) than respondents who reported not having experienced physical or psychological violence in childhood from parents.

Method

Data

This study used data from two waves of the 1995-2005 National Survey of Midlife in the U.S. (MIDUS). The main MIDUS survey consists of a national probability, random-digit-dial sample of noninstitutionalized, English-speaking adults residing in the conterminous United States and between the ages of 25 and 74 in 1995 (Time 1 [T1]). At T1, respondents were asked to complete both a telephone survey and self-administered questionnaire. In 2004-2005 (Time 2 [T2]), respondents were asked to complete a follow-up telephone interview and self-administered questionnaire. A total of 3,024 individuals in the MIDUS national probability sample responded to both the telephone survey and self-administered questionnaire at T1 (60.8% response rate); 2,098 of these respondents completed at least the telephone interview at T2 (approximately 74% of the respondents who participated in both the telephone survey and self-administered questionnaire at T1 who had not been confirmed as deceased as of December, 2005), and 1,745 of these respondents completed both the telephone survey and self-administered questionnaire at T2 (approximately 62% of the respondents who participated in both the telephone survey and self-administered questionnaire at T1 who had not been confirmed as deceased as of December, 2005).

To account for the fact that nonrespondents to the MIDUS tended to have lower levels of education and income and to be from nonmajority racial and

ethnic groups, as well as for the fact that the survey design at T1 involved oversampling older adults and men, sampling weights that correct for selection probabilities and nonresponse were created that allow this sample to match the composition of the U.S. population on age, sex, race and ethnicity, and education in 2005. Multivariate regression analyses were conducted with both the weighted and unweighted data. Because results based on the weighted data were similar to those based on the unweighted data, we report estimates from analyses with the unweighted data because these analyses provide estimates with more reliable standard errors (Winship & Radbill, 1994).

Measures of the Dependent Variables

Self-rated health. A single item in the telephone interviews at T1 and T2 asked respondents to rate their physical health on a 5-point Likert scale (0 = *poor*, 1 = *fair*, 2 = *good*, 3 = *very good*, 4 = *excellent*). Table 1 presents descriptive statistics for this, and all other, analytic variables for all respondents who participated in T1 of the survey, as well as for all respondents who participated in both T1 and T2 of the survey.

Functional health. In the self-administered questionnaires at T1 and T2, respondents indicated how much their health limits them when performing various activities, including lifting or carrying groceries; bathing or dressing oneself; walking one block; walking several blocks; bending, kneeling, or stooping; and climbing one flight of stairs. Respondents who reported that their health limited them to any extent on a given activity were coded 1 on that item, and respondents who reported that their health did not limit them were coded 0. Scores across the six items were summed. Cronbach's alpha for this scale was .86 at both T1 and T2.

Chronic conditions. In the telephone interviews at T1 and T2, respondents reported whether they had ever had heart trouble or cancer. In the self-administered questionnaires, respondents further indicated whether in the past 12 months they had experienced or been treated for each of 29 chronic conditions (e.g., asthma, arthritis, thyroid disease, urinary problems, hypertension, and diabetes). Measures were created with respect to T1 and T2 indicating the total number of conditions respondents specified across the 31 items. Given the relatively small number of participants who reported having nine or more types of conditions at T1 or T2, participants with nine or more conditions were combined into a single analytic group, giving this measure a range of 0 to 9.

The bivariate correlations at T1 between self-assessed health and functional limitations, self-assessed health and chronic conditions, and

Table 1. Descriptives for Analytic Variables

Variable	Cross-sectional sample[a] Mean[c]	Longitudinal sample[b] Mean[c]	Range
Health at Time 1			
Self-rated health	2.47 (0.99)	2.57 (0.93)	0.00–4.00
Functional limitations	1.39 (1.88)	1.20 (1.72)	0.00–5.00
Chronic conditions	2.63 (2.46)	2.55 (2.37)	0.00–9.00
Health at Time 2			
Self-rated health	—	2.52 (0.99)	0.00–4.00
Functional limitations	—	1.89 (2.04)	0.00–5.00
Chronic conditions	—	2.73 (2.34)	0.00–9.00
Profiles of violence in childhood from parents[d]			
Never physical and never psychological	0.25 (0.43)	0.25 (0.43)	0.00–1.00
Never physical and rare psychological	0.09 (0.29)	0.10 (0.30)	0.00–1.00
Never physical and frequent psychological	0.04 (0.20)	0.04 (0.21)	0.00–1.00
Rare physical and never psychological	0.08 (0.27)	0.08 (0.28)	0.00–1.00
Rare physical and rare psychological	0.15 (0.36)	0.16 (0.37)	0.00–1.00
Rare physical and frequent psychological	0.10 (0.30)	0.09 (0.29)	0.00–1.00
Frequent physical and never psychological	0.02 (0.14)	0.01 (0.12)	0.00–1.00
Frequent physical and rare psychological	0.03 (0.18)	0.03 (0.17)	0.00–1.00
Frequent physical and frequent psychological	0.23 (0.42)	0.22 (0.42)	0.00–1.00

(continued)

Table 1. (continued)

Variable	Cross-sectional sample[a] Mean[c]	Longitudinal sample[b] Mean[c]	Range
Covariates			
Biological parents together in childhood[d]	0.76 (0.43)	0.79 (0.41)	0.00–1.00
Receipt of welfare in childhood[d]	0.06 (0.24)	0.05 (0.22)	0.00–1.00
Parents' education[d]			
< 12 years	0.22 (0.41)	0.21 (0.47)	0.00–1.00
12 years	0.31 (0.46)	0.32 (0.47)	0.00–1.00
> 12 years	0.31 (0.46)	0.34 (0.47)	0.00–1.00
Missing	0.16 (0.37)	0.13 (0.39)	0.00–1.00
Age[d]	46.92 (13.03)	47.47 (12.55)	25.00–74.00
Female[d]	0.51 (0.50)	0.54 (0.50)	0.00–1.00
Race/ethnicity[d]			
White	0.86 (0.35)	0.89 (0.31)	0.00–1.00
Black	0.06 (0.24)	0.04 (0.21)	0.00–1.00
Latino	0.05 (0.22)	0.04 (0.21)	0.00–1.00
Other race/ethnicity	0.03 (0.17)	0.02 (0.13)	0.00–1.00
Respondents' education[d]			
< 12 years	0.10 (0.29)	0.07 (0.25)	0.00–1.00
12 years	0.29 (0.45)	0.28 (0.45)	0.00–1.00
13–15 years	0.31 (0.46)	0.30 (0.46)	0.00–1.00
16+ years	0.30 (0.46)	0.35 (0.48)	0.00–1.00
Household income (in $10,000 units)[d]	5.46 (4.76)	5.78 (4.81)	0.00–30.00
Employed[d]	0.73 (0.44)	0.75 (0.43)	0.00–1.00

(continued)

Table 1. (continued)

Variable	Cross-sectional sample[a] Mean[c]	Longitudinal sample[b] Mean[c]	Range
Married[d]	0.64 (0.48)	0.68 (0.47)	0.00–1.00
History of sexual assault[e]			
Yes	0.06 (0.23)	0.10 (0.30)	0.00–1.00
No	0.35 (0.48)	0.60 (0.49)	0.00–1.00
Missing	0.59 (0.49)	0.30 (0.46)	0.00–1.00

Note: Data are from the 1995-2005 National Survey of Midlife in the U.S. (MIDUS). Unweighted data from the relevant sample were used for descriptives.
a. The cross-sectional sample includes respondents who participated at Time 1 of the survey.
b. The longitudinal sample includes respondents who participated at both Time 1 and 2 of the survey.
c. Standard deviations are reported in parentheses below each mean. Means for dichotomous variables are reported as proportions, and some proportions do not sum to 1 because of rounding error.
d. Measured at Time 1.
e. Measured at Time 2.

functional limitations and chronic conditions were –.47, –.42, and .42, respectively. These moderate correlations suggest that this study's three focal outcomes indicate somewhat distinct, though related, dimensions of health (Patrick & Erickson, 1993).

Measures of the Independent Variables

Profiles of violence in childhood from parents. In the self-administered questionnaire at T1 only, respondents were presented with a series of items from a modified version of the Conflict Tactics Scales (CTS; Straus, 1979). The CTS—which includes multiple subscales to measure different types of violence—is among the most commonly used measuring tools in the field of family violence (Straus, Hamby, Finklehor, Moore, & Runyan, 1998). Respondents were introduced to the series of items on childhood family violence as "three lists of things that happen to some children." One list referred to acts of psychological violence, including "insulted you or swore

at you; sulked or refused to talk to you; stomped out of the room; did or said something to spite you; threatened to hit you; smashed or kicked something in anger." Two lists referred to acts of physical violence, with one including "pushed, grabbed, or shoved you; slapped you; threw something at you" and the other including "kicked, bit, or hit you with a fist; hit or tried to hit you with something; beat you up; choked you; burned or scalded you."

Participants indicated the extent to which their "mother, or the woman who raised them," and their "father, or the man who raised them" engaged in any of the acts on each list by selecting among five response options—*never, rarely, sometimes, often*, and *does not apply*. The 64 respondents who reported that the lists of violence were not applicable to either of their parents were excluded from the analyses to maintain a more precise contrast between respondents who were in a position to experience violence from parents, but who did not, and respondents who did experience violence from parents. Otherwise, responses of *does not apply* to particular items were coded as *never* if the respondent provided a valid response to at least one other item regarding a particular type of violence from parents.

Scores across the six items (one referring to each of the three lists of violence with respect to one of two parents) were used to code respondents into one of nine qualitatively distinct profiles of violence in childhood from parents. Given concerns over the discriminant validity between acts on the two lists of physical violence (Straus et al., 1998), respondents' highest of the frequency scores with respect to each of the two lists of physical violence from mothers and fathers was used as an overall indicator of frequency of physical violence from parents. Also, to simplify the categories of frequency at which violence reportedly occurred and to preserve cell sizes, while still maintaining distinctions between respondents who reported no violence versus occasional violence, as well as between respondents who reported occasional violence versus frequent violence, reports of *sometimes* and *often* were combined into a single-frequency category of violence, which we henceforth refer to as *frequent*.

Thus, the final categorization scheme—created to indicate the highest frequency level of type(s) of violence from either or both parents—included eight categories: (1) never physical or psychological violence, (2) never physical and rare psychological violence, (3) never physical and frequent psychological violence, (4) rare physical and never psychological violence, (5) rare physical and rare psychological violence, (6) rare physical and frequent physical violence, (7) frequent physical and never psychological violence, (8) frequent physical and rare psychological violence, and (9) frequent physical and frequent psychological violence. Table 1 includes the

proportion of respondents in both the cross-sectional and longitudinal samples who reported each of the profiles of violence. Although for both the cross-sectional and longitudinal samples the most common profile of childhood violence for was having never experienced psychological or physical violence from parents (25%), a significant proportion of respondents (22%-23%) also reported having experienced frequent physical and frequent psychological violence.

Covariates

Given findings from previous studies indicating that a variety of sociodemographic factors are associated with violence against children (e.g., Belsky, 1980; Berger, 2005; Pelton, 1994), as well as adult health (e.g., Haas, 2008; Orfila et al., 2006; Thorpe et al., 2008), this study included measures of several sociodemographic variables as covariates in all models. These variables included whether respondents reported living with both of their biological parents until the age of 16, whether respondents reported a period of 6 months or more when their family was on welfare or Aid to Families With Dependent Children (AFDC) during their childhood or adolescence, respondents' reports of their parents' highest level of education (less than 12 years, 12 years, more than 12 years, missing data on parents' education), respondents' age, gender, race/ethnicity (non-Hispanic White, African American, Latina/o, other race/ethnicity), educational attainment (less than 12 years, 12 years, 13-15 years, 16 or more years), household income, and whether or not respondents were married. We also included as a covariate a variable that assessed respondents' history of sexual assault (reported having been sexually assaulted, reported not having been sexually assaulted, missing data on the item assessing history of sexual assault). With the exception of the variable indicating history of sexual assault—an item that was included only at T2 of the survey—all covariates were based on reports at T1.

Data Analytic Sequence

Because models were estimated across three somewhat related aspects of adult health, we estimated seemingly unrelated regression models (Zellner, 1962), which allowed for correlated error terms across the models for each physical health outcome. All models included the complete block of covariates. To test Hypothesis 1 regarding profiles of childhood family violence and poorer baseline adult health status, we estimated models for self-rated health, functional health, and chronic conditions in which each dimension

of health at T1 was regressed on eight dichotomous variables indicating different profiles of violence from parents, with respondents who reported never physical or psychological violence from parents as the reference group. To examine Hypothesis 2 regarding linkages between profiles of childhood family violence and trajectories of health across adulthood, we estimated lagged dependent variable models where each dimension of health at T2 was regressed on the multicategorical variable indicating profiles of childhood family violence, in addition to the respective dimension of health at T1.

As a preanalytic step, we added interaction terms between gender and each of the dichotomous variables indicating different profiles of violence (e.g., Female × Rare Physical and Rare Psychological Violence) to the models estimated to test Hypothesis 1. (Limited cell sizes precluded estimating gender interactions for the longitudinal sample.) These models did not provide evidence of any robust gender interactions; therefore, we analyzed data from men and women in the same analytic sample.

Results

Profiles of Childhood Family Violence and Adult Health Status

Hypothesis 1 predicted that respondents who reported diverse profiles of childhood violence from parents would demonstrate poorer adult health status in contrast to respondents who reported neither physical nor psychological violence in childhood from parents. Table 2 displays results regarding this hypothesis for each dimension of health examined—self-rated health, functional impairment, and chronic conditions, respectively. Out of the eight coefficients indicating linkages between profiles of violence in childhood from parents and adult health, the coefficient for reports of both frequent physical and psychological violence was consistently associated with poorer adult health status. In contrast to respondents who reported never having experienced physical or physical violence in childhood from parents, respondents who reported having experienced both frequent physical and frequent psychological violence from parents indicated poorer levels of self-rated health ($B = -.12$, $p \leq .05$), more functional limitations ($B = .29$, $p \leq .01$), and a greater number of chronic conditions ($B = .86$, $p \leq .001$).

Examining the standardized coefficients provides us with an opportunity to compare the relative strength of associations across the three outcomes. These findings indicate that the linkage between the profile

Table 2. Seemingly Unrelated Regression Coefficient Estimates for the Associations Between Profiles of Violence in Childhood From Parents and Adult Health Status

	Self-Rated Health Time 1			Functional Limitations Time 1			Chronic Conditions Time 1		
	Model 1			Model 2			Model 3		
	B	*SE*	β	*B*	*SE*	β	*B*	*SE*	β
Never physical and:									
Never psychological[a]	—	—	—	—	—	—	—	—	—
Rare psychological	–0.04	0.07	–.01	–0.14	0.12	–.02	0.00	0.17	.00
Frequent psychological	–0.04	0.09	–.01	0.10	0.17	.01	0.34	0.23	.03
Rare physical and:									
Never psychological	–0.00	0.07	–.00	–0.16	0.13	–.02	0.04	0.17	.00
Rare psychological	0.02	0.06	.01	0.10	0.11	.02	0.11	0.14	.02
Frequent psychological	–0.08	0.07	–.02	0.16	0.12	.02	0.54***	0.16	.06
Frequent physical and:									
Never psychological	0.04	0.13	.01	–0.11	0.24	–.01	0.08	0.33	.00
Rare psychological	–0.02	0.11	–.00	.23	0.19	.02	0.47	0.26	.03
Frequent psychological	–0.12*	0.05	–.05	0.29**	0.10	.07	0.86***	0.13	.15
Constant	2.37***	0.12	—	0.54*	0.22	—	1.07***	0.30	—
Valid *N*	2,776	—	—	2,776	—	—	2,776	—	—

Note: Data are from the 1995-2005 National Survey of Midlife in the U.S. (MIDUS). All models included as covariates measures of respondents' parents' highest level of education, respondents' childhood family structure, family's receipt of public assistance in childhood, current educational attainment, age, race and ethnicity, gender, household income, marital status, employment status, and history of sexual assault.

a. Reference category.

*$p \leq .05$. **$p \leq .01$. ***$p \leq .001$ (two-tailed).

involving both frequent physical and frequent psychological violence and adult health was largest with respect to number of chronic condition (β = .15), relative to associations for self-rated health (β = –.05) and functional limitations (β = .07).

Results displayed in Table 2 also indicate that respondents who reported rare physical and frequent psychological violence demonstrated more chronic conditions ($B = .54$, $p \leq .001$). No other profile of violence was associated with self-rated health, functional limitations, or chronic conditions at T1 of the survey. These results, overall, provide some evidence in support of Hypothesis 1 regarding childhood family violence as a risk factor for poorer adult health status.

Profiles of Childhood Family Violence and Trajectories of Adult Health Across a 10-Year Period in Adulthood

Hypothesis 2 predicted that respondents who reported diverse profiles of childhood violence from parents would demonstrate more rapidly declining trajectories of health in adulthood in contrast to respondents who reported neither physical nor psychological violence in childhood from parents. Table 3 displays results regarding this hypothesis for each of the three dimensions of physical health examined. Similar to results for Hypothesis 1, the profile involving both frequent physical and frequent psychological violence was consistently associated with more rapidly declining trajectories of health. In contrast to respondents who reported never having experienced physical or psychological violence in childhood from parents, respondents who reported having experienced both frequent physical and frequent psychological violence from parents indicated greater decreases in self-rated health across 10 years in adulthood ($B = –.12$, $p \leq .05$), as well as greater increases in functional limitations ($B = .28$, $p \leq .05$) and greater increases in chronic conditions ($B = .30$, $p \leq .05$).

Again, examining the standardized coefficients provides us with an opportunity to compare the relative strength of associations between the most intense profile of violence and trajectories of health across the three outcomes. These results indicate that the association between reports of both frequent physical and frequent psychological violence and trajectories of self-rated health (β = –.05) is relatively comparable in size to that of the association between this profile of violence and functional limitations (β = .06) as well as chronic conditions (β = .05).

Moreover, two additional profiles of violence were associated with more rapidly declining adult health. In contrast to respondents who reported

Table 3. Seemingly Unrelated Regression Coefficient Estimates for the Associations Between Profiles of Violence in Childhood From Parents and Trajectories of Health in Adulthood

	Self-Rated Health Time 2			Functional Limitations Time 2			Chronic Conditions Time 2		
	Model 1			Model 2			Model 3		
	B	*SE*	β	*B*	*SE*	β	*B*	*SE*	β
Self-rated health Time 1	0.41***	0.02	.40	—	—	—	—	—	—
Functional limitations Time 1	—	—	—	0.50***	0.02	.94	—	—	—
Chronic conditions Time 1	—	—	—	—	—	—	0.47***	0.02	1.17
Never physical and:									
Never psychological[a]	—	—	—	—	—	—	—	—	—
Rare psychological	0.11	0.08	.03	0.01	0.15	.00	0.14	0.17	.04
Frequent psychological	–0.17	0.10	–.03	0.09	0.20	.02	0.33	0.23	.07
Rare physical and:									
Never psychological	0.14	0.08	.04	–0.09	0.16	–.03	–0.01	0.18	–.00
Rare psychological	0.01	0.06	.00	0.25*	0.12	.09	0.02	0.14	.01
Frequent psychological	0.04	0.08	.00	0.15	0.15	.04	0.12	0.18	.03
Frequent physical and:									
Never psychological	–0.33	0.17	–.05	0.50	0.33	.07	0.70	0.39	.10
Rare psychological	–0.12	0.12	–.02	0.19	0.24	.03	0.59*	0.28	.10
Frequent psychological	–0.12*	0.06	–.05	0.28*	0.12	.12	0.30*	0.14	.13
Constant	1.56***	0.15	—	–0.02	0.27	—	0.13	0.31	—
Valid *N*	1,605	—	—	1,605	—	—	1,605	—	—

Note: Data are from the 1995-2005 National Survey of Midlife in the U.S. (MIDUS). All models included as covariates measures of respondents' parents' highest level of education, respondents' childhood family structure, family's receipt of public assistance in childhood, current educational attainment, age, race/ethnicity, gender, household income, marital status, employment status, and history of sexual assault.

a. Reference category.

*$p \leq .05$. **$p \leq .01$. ***$p \leq .001$ (two-tailed).

never physical or psychological violence in childhood from parents, respondents who reported rare physical violence and rare psychological violence reported greater increases in functional limitations ($B = .25$, $p \geq .05$). Additionally, respondents who reported frequent physical violence and rare psychological violence also indicated more severe increases in chronic conditions ($B = .59$, $p \leq .05$). No other profiles of violence in childhood from parents were associated with changes in any of the physical health outcomes across the 10-year observation period. These results, overall, provide some evidence in support of Hypothesis 2 regarding childhood family violence as a risk factor for poorer trajectories of health across a 10-year period in adulthood.

Discussion

The purpose of this study was to examine linkages between reports of physical and psychological violence in childhood from parents and three dimensions of adult physical health (self-rated health, functional limitations, and chronic conditions). Guided by a life course perspective, we examined various distinct profiles of childhood family violence as risk factors for poorer adult health status, as well as for poorer trajectories of health over a 10-year period in adulthood. This study's examination of associations across multiple profiles of physical and psychological violence from parents in childhood and multiple dimensions of adult health status and trajectories allow for interpreting results regarding which profiles of violence are most consistently associated with poorer adult health, as well as which dimensions of adult health are most sensitive to reports of childhood family violence.

First, addressing calls for research on multiple, yet specific, experiences of violence within studies on the long-term consequences of childhood family violence (e.g., Malinosky-Rummell & Hansen, 1993), findings indicated that reports of having experienced both frequent physical and frequent psychological violence in childhood from parents were consistently associated with poorer adult health. This profile was associated with poorer adult health status at the initial wave of the study (i.e., lower levels of self-rated health, higher levels of functional limitations, and higher levels of chronic conditions), as well as with more rapidly decreasing levels of health across the 10-year study period (i.e., greater declines in self-rated health, greater increases in functional limitations, and greater increases in chronic conditions). This pattern of findings demonstrates the importance of continued focus on the long-term consequences of particularly intense experiences of

violence in childhood, which some previous scholarship has conceptualized as childhood abuse (e.g., Irving & Ferraro, 2006).

In terms of which dimensions of adult physical health are most sensitive to reports of childhood family violence, this study found a limited amount of variation in patterns across the three focal aspects of adult health. Regarding adult health status at a single point in adulthood, results indicated more linkages between profiles of childhood family violence and chronic conditions than self-rated health or functional limitations. Adult health status in terms of functional limitations and self-rated health were only associated with reports of both frequent physical and frequent psychological violence, whereas adult health status in terms of chronic conditions also was associated with reports of rare physical and frequent psychological violence. Regarding trajectories of health across 10 years in adulthood, only reports of both physical and psychological violence were associated with self-rated health, whereas additional profiles of violence were associated with trajectories of health in terms of functional limitations and chronic conditions. Reports of rare physical and rare psychological violence were associated with greater increases in functional limitations, and reports of frequent physical and rare psychological violence were associated with greater increases in chronic conditions.

The fact that several less intense profiles of violence were associated with adult health suggests the value of accounting for particular types and frequency levels of violence within studies on the long-term health effects of childhood family violence. The cross-sectional finding that reports of frequent psychological and rare physical violence were associated with higher levels of chronic conditions provides evidence for continued concern over the potential effects of children's experiences of psychological violence, even when such violence is coupled with minimal physical violence (Yates & Wekerle, 2009). Similarly, the longitudinal finding that frequent physical violence in combination with rare psychological violence was associated with increasing levels of chronic conditions in adulthood supports the idea that frequent physical violence from parents can have long-term health risks, even when coupled with minimal psychological violence.

It is more difficult to interpret why reports of rare physical violence in combination with rare psychological violence were an additional predictor of greater increases in functional limitations over time, whereas other profiles of violence involving both types of violence at more frequent levels (e.g., rare physical and frequent psychological violence, frequent physical and rare psychological violence) were not associated with poorer trajectories of adult health in terms of functional limitations. It is possible that the

relatively large proportion of the sample who reported rare physical and rare psychological violence (16%) might have provided the statistical power necessary for a reliable and significant association to emerge for this group. This result suggests the necessity of exercising caution in ruling out linkages between other less intense profiles of violence and adult health for which we did not find significant associations. Associations for some other profiles of violence might have reached statistical significance if such profiles had included even larger cell sizes of respondents, allowing for more statistical power to detect smaller—but still notable—associations.

The overall pattern of results from this study underscore the importance for additional studies to examine potentially distinct pathways from childhood family violence to particular health outcomes throughout adulthood (e.g., see Springer, 2004). Because processes from childhood family violence to poorer aspects of adult health are likely to be multifaceted and extend throughout childhood and adulthood (Kendall-Tackett, 2002), research that draws on data gathered at multiple points across the life course regarding diverse, yet specific, biopsychosocial domains, as well as multiple aspects of adult health, is critical. Developing a more refined understanding of who is at greatest risk for poorer adult health due to experiences of childhood family violence, as well as the processes through which childhood family violence leads to imperiled adult health for particular subgroups of adults, can contribute to more targeted practice and policy measures aimed at fostering optimal life-course development for individuals with histories of family violence.

Several features of the current study limit the full extent to which conclusions can be drawn regarding the various profiles of childhood family violence as a risk factor for poorer adult health. First, despite this study's inclusion of many statistical controls, there are other factors that this study did not account for—such as genetic factors and other types of childhood family adversities—which, if taken into account, might yield a more complex causal story than we suggest here. Previous scholarship also has indicated that children who reside in disadvantaged neighborhoods are at greater risk for experiencing violence from parents (Coulton, Crampton, Irwin, Spilsbury, & Korbin, 2007) as well as for poorer adult health (Furumoto-Dawson, Gehlert, Sohmer, Olopade, & Sacks, 2007). Accounting for this factor within multivariate models might attenuate or eliminate the associations observed, due either to an underlying process of mediation, or possibly, to a spurious association between childhood family violence and adult health. Causal inferences are also somewhat tenuous given the retrospective nature of this study's measure of childhood family violence.

Linkages might, in part, reflect processes of reverse causality in which individuals' poorer health causes them to more readily recall negative interpersonal interactions from childhood. This potential for reverse causality might be particularly problematic with respect to interpreting the cross-sectional results regarding reports of childhood family violence and adult health status at the initial wave of data collection.

Other limitations of this study result from remaining variability in experiences of violence that undoubtedly still exists even within the different specified profile groups of violence. Due to limitations in the measurement index, this study was unable to distinguish more minor from more major acts of psychological and physical violence. Also, this study's measure of childhood family violence did not attempt to assess why childhood violence reportedly occurred. Differences in the motivation and contexts surrounding the use of violence (e.g., reasoned discipline vs. acts of unprovoked rage) are likely to influence the linkages between childhood family violence and adult health.

Finally, systematic patterns of attrition and compounded nonresponse across the 10-year study period raise concerns about biased estimates of population parameters (Acock, 2005), specifically with respect to the longitudinal analyses.

Despite these limitations, this study's findings provide additional empirical support for the importance of policies and practices to prevent episodes of frequent physical and psychological violence against children. Historically, much of the formal discourse advocating for child abuse prevention policies has focused on the importance of ensuring the well-being of vulnerable children (e.g., U.S. Department of Health and Human Services, 2001). More recently, however, calls for support for public support to prevent family violence against children have noted the broader fiscal and societal utility of such programs, such as to minimize indirect costs resulting from childhood family violence (e.g., Wisconsin Child Abuse and Neglect Prevention Board, 2007), including long-term costs associated with healthcare (Walker et al., 1999). Congruent with this more recent approach, results of this study suggest that efforts to prevent and intervene with children experiencing severe violence from parents are important not only for ensuring the health and well-being of contemporary cohorts of children, but also for promoting the optimal health and aging of future cohorts of adults.

Declaration of Conflicting Interests

The authors declared that they had no conflicts of interests with respect to their authorship or the publication of this article.

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