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Use of Spanking for 3-Year-Old Children and Associated Intimate Partner Aggression or Violence

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KEY WORDS

corporal punishment, physical punishment, spank, parenting, domestic violence, intimate partner aggression or violence, toddlers, epidemiology

ABBREVIATIONS

CP—corporal punishment

IPAV—intimate partner aggression or violence

FFCWS—Fragile Families and Child Wellbeing Study

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WHAT'S KNOWN ON THIS SUBJECT: CP is associated with risk for harm to children yet has a high prevalence and high approval ratings in the United States. Very few studies have assessed the co-occurrence of IPAV and CP.



WHAT THIS STUDY ADDS: This study describes CP and associated IPAV in families by using a population-based sample and reports from both mothers and fathers. It also specifies who aggressed against the child, assessed 5 patterns of co-occurrence, and examined alternative explanations for co-occurrence.

abstract

FREE

OBJECTIVES: The objective of this study was to examine associations between maternal and paternal use of corporal punishment (CP) for 3-year-old children and intimate partner aggression or violence (IPAV) in a population-based sample.

METHODS: The study sample ($N = 1997$) was derived from wave 3 of the Fragile Families and Child Wellbeing Study. Mother and father reports regarding their use of CP and their IPAV victimization were analyzed. IPAV included coercion and nonphysical and physical aggression.

RESULTS: Approximately 65% of the children were spanked at least once in the previous month by 1 or both parents. Of couples who reported any family aggression (87%), 54% reported that both CP and IPAV occurred. The most prevalent patterns of co-occurrence involved both parents as aggressors either toward each other (ie, bilateral IPAV) or toward the child. The presence of bilateral IPAV essentially doubled the odds that 1 or both parents would use CP, even after controlling for potential confounders such as parenting stress, depression, and alcohol or other drug use. Of the 5 patterns of co-occurring family aggression assessed, the “single aggressor” model, in which only 1 parent aggressed in the family, received the least amount of empirical support.

CONCLUSIONS: Despite American Academy of Pediatrics' recommendations against the use of CP, CP use remains common in the United States. CP prevention efforts should carefully consider assumptions made about patterns of co-occurring aggression in families, given that adult victims of IPAV, including even minor, nonphysical aggression between parents, have increased odds of using CP with their children. *Pediatrics* 2010;126:415–424

Despite the fact that the American Academy of Pediatrics does not recommend the use of corporal punishment (CP) for children,^{1,2} CP has high approval ratings³ and high prevalence rates in the United States.^{4–6} CP has been linked with many poor outcomes for children, including poorer mental health and parent–child relationships and increased aggressive behavior,⁷ with the latter being true even after controlling for other parenting risks and the child’s initial level of aggression.⁸ CP also is associated with increased odds of child maltreatment,⁶ particularly child physical abuse.^{7,9}

Although much attention has been paid to determining risk factors and patterns of child maltreatment, less attention has been paid to determining risk for CP. CP and child maltreatment share many of the same risk factors, including parenting stress, depression, use of alcohol or other drugs, and consideration of aborting the child.^{6,8,10} Parents also are more likely to use CP when they experienced CP during their own childhood^{11,12}; believe that it will lead to positive outcomes^{13,14}; have positive attitudes or beliefs toward it^{12,14–16}; or perceive approval of CP use by experts, family, or friends.¹⁴ Risk for using CP may increase with approval or use of other types of coercion, aggression, or violence in the family as well.

Many studies have examined the co-occurrence of intimate partner aggression or violence (IPAV) and child physical abuse (e.g., see reference¹⁷), but few have examined co-occurring IPAV and CP specifically. One population-based study is a notable exception: Slep and O’Leary¹⁸ found that almost 90% of families reported using CP with children and/or some form of physical aggression between intimate partners, which included mild physical aggression such as pushing or grabbing; and of those families, 51% reported

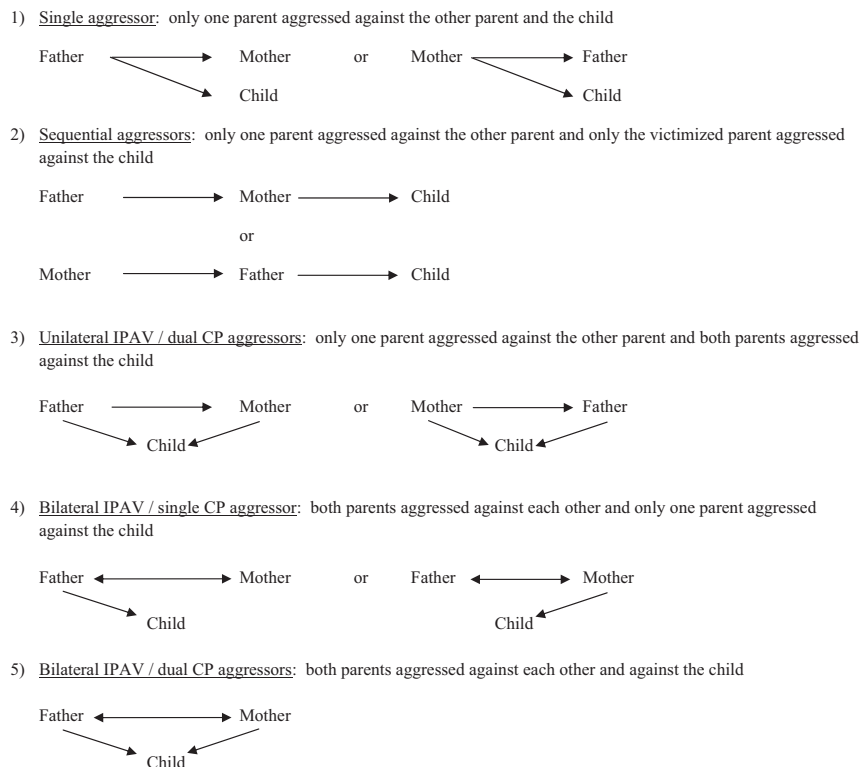


FIGURE 1 Five patterns of co-occurring IPAV and CP of the index child assessed in this study. Bilateral IPAV does not mean that there was equivalence between adults in terms of fault or potential for harm.

both IPAV and aggression toward the child. The most common pattern of co-occurring family aggression that they found involved bilateral IPAV (ie, both parents aggressed against each other) in conjunction with both parents’ aggressing against the child.¹⁸ Although multiple patterns of co-occurring family aggression might be discerned in a population,¹⁷ most previous studies of co-occurring family aggression or violence have made assumptions about a single IPAV aggressor, usually an adult male, and have not specified who aggressed against the child (e.g., see references^{19–21}).

In this study, we aimed to expand on this previous literature to understand better the patterns of family aggression and risk for use of CP. First, we assessed the prevalence of the following 5 patterns of co-occurring IPAV and use of CP on the basis of reports from both parents: (1) single aggressor; (2)

sequential aggressors; (3) unilateral IPAV/dual CP aggressors; (4) bilateral IPAV/single CP aggressor; and (5) bilateral IPAV/dual CP aggressors (Fig 1). Second, we examined associations between IPAV patterns and patterns of CP use within families. Understanding such patterns and associated risks within a population-based sample may have important implications for CP and child abuse prevention interventions.

METHODS

Study Sample

The Fragile Families and Child Wellbeing Study (FFCWS) is a national longitudinal cohort study of families in 20 US cities with populations of >200 000. For each family or case ($n = 4898$), baseline data were collected for the mother, father, and index child at or near the time of the index child’s birth,

with additional waves of data collected when the index child was 1, 3, and 5 years of age. Interviews were available in English or Spanish. This secondary data analysis was considered exempt by the institutional review board at Tulane University Health Sciences Center; however, the FFCWS protocol was approved by the institutional review boards at Princeton and Columbia Universities, the FFCWS home institutions. A complete description of the FFCWS sampling strategy and design is documented elsewhere.²²

The study sample included only families for which mothers and fathers both completed interviews when the index child was 3 years of age ($n = 3165$). Compared with those who did not complete the 3-year interview ($n = 1733$), these parents were more likely to be married and these mothers were more likely to be older, more educated, and white and have a higher income and a nonmissing response for religion; they were less likely to be foreign-born or have considered aborting the child. (When comparable father data were available, the same trends held.) Because of the centrality of both the CP and IPAV variables in this study, families also had to meet the following eligibility criteria to be included in this study (number of dropped cases for each criterion is listed): (1) both parents had to have seen the child within the past 30 days before the interview (a requirement for being asked about their use of CP with the child; $n = 273$); (2) neither parent could have a “missing” response to the CP question ($n = 12$); (3) both parents had to report being either married or romantically involved with each other at the wave 3 interview (a requirement for being asked about their IPAV victimization by the other parent; $n = 870$); and (4) neither parent could have “missing” responses to all of the IPAV questions ($n = 13$). A final sample of 1997 fami-

lies met all of the study eligibility criteria.

Table 1 shows descriptive characteristics for all families who completed interviews at wave 3 along with statistics showing that, on the basis of most of the assessed characteristics, families who were included in this study were statistically different from those who were excluded. Characteristics that are more common in the excluded group are associated with higher overall risk for IPAV and CP (Table 2); this is because the 2 main exclusion criteria (either parent not seeing the child at least once in the past month and parents’ being no longer romantically involved) both are associated with higher risk family characteristics.

Variables

All variables were based on mother and father self-reports and were assessed when the index child was 3 years of age, with the exception of some demographics and a question about consideration of abortion, which were assessed at baseline. All child-related variables refer to the index child.

Corporal Punishment

CP was assessed with a question that asked each parent whether he or she had spanked the child in the past month for misbehaving or acting up and was coded as neither parent (0), only mother (1), only father (2), or both parents (3) spanked the index child at least once in the past month.

Intimate Partner Aggression or Violence

IPAV victimization by the other parent was assessed by using 7 items. Three items were adapted from the Conflict Tactics Scale²³ to assess physical violence and coercion: slaps or kicks you; hits you with a fist or an object that could hurt you; and tries to make you have sex or do sexual things you don’t

want to do. Four items were adapted from studies by Lloyd²⁴ and the Spouse Observation Checklist²⁵ to assess psychological aggression and coercion: tries to keep you from seeing or talking with your friends or family; tries to prevent you from going to work or school; withholds/makes you ask for/takes your money; and insults or criticizes you. A binary variable was created for each parent that indicated whether the parent had reported experiencing any type of IPAV victimization by the other parent.* These 2 variables were combined to create the final IPAV variable, which was coded as neither parent (0), only mother (1), only father (2), or both parents (3) reported any type of IPAV victimization by the other parent.

Covariates

Other parenting risk factors and family demographics were chosen for inclusion in this study on the basis of previous evidence suggesting an association between these variables and CP.^{6,8,26,27}

Parenting stress was assessed by using 4 items from the Parenting Stress Index,²⁸ which measured the extent to which mothers ($\alpha = .61$) and fathers ($\alpha = .63$) agreed (from 0 = strongly disagree to 3 = strongly agree) with statements such as, “Being a parent is harder than I thought it would be.” Each variable was coded as an average score for the 4 items.

Presence of depression and use of alcohol or other drugs were assessed by using the Composite International Diagnostic Interview—Short Form, a standardized instrument that is widely used and has documented reliability and validity.²⁹ Scoring for depression was based on diagnostic criteria set forth in the *Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition*.³⁰ A parent was coded positively for use of alcohol or drugs when he or

TABLE 1 Descriptive and Bivariate Statistics of Family Characteristics for the Entire FFCWS Sample Interviewed During Wave 3 (2001–2004), When the Child Was 3 Years of Age, by Inclusion Versus Exclusion From This Study

Parameter	Total FFCWS Wave 3 Sample (n = 3165)	Included in This Study (n = 1997)	Excluded From This Study (n = 1168)	P
Parenting risk factors				
Parenting stress score, mean ± SD				
Mother (range: 0–3)	1.24 ± 0.7	1.21 ± 0.6	1.30 ± 0.7	<.001
Father (range: 0–3)	1.07 ± 0.7	1.07 ± 0.7	1.08 ± 0.7	NS
Major depression, %				
Mother	20.3	16.0	27.5	<.001
Father	14.2	10.6	20.5	<.001
Use of alcohol or other drugs, %				
Mother	15.4	14.4	17.1	<.050
Father	35.1	35.0	35.3	NS
Considered aborting this child, %				
Mother	26.0	19.7	36.8	<.001
Father	14.3	11.9	18.5	<.001
Father's report of ever being in jail, %	21.8	14.3	34.6	<.001
Family demographics				
Child gender (boy), %	52.1	52.7	52.1	NS
Age, mean ± SD, y				
Mother	28.5 ± 6.1	29.6 ± 6.2	26.6 ± 5.5	<.001
Father	31.1 ± 7.3	32.0 ± 7.1	29.4 ± 7.4	<.001
Education, mother, %				
Less than high school	31.5	27.5	38.4	<.001
High school	29.6	27.3	33.7	<.001
Some college	25.6	26.5	24.1	NS
College graduate	13.1	18.6	3.7	<.001
Race/ethnicity, %				
Mother				
Black	46.3	35.6	64.5	<.001
Hispanic	25.4	30.2	17.3	<.001
White	24.0	29.1	15.4	<.001
Other	4.0	4.8	2.7	<.010
Father				
Black	48.6	38.0	66.8	<.001
Hispanic	25.1	29.7	17.0	<.001
White	22.0	27.3	12.8	<.001
Other	3.8	4.5	2.6	<.010
Foreign-born, %				
Mother	15.2	21.1	5.1	<.001
Father	14.7	19.6	6.3	<.001
Religion, %				
Mother				
Catholic	27.9	33.7	18.0	<.001
Protestant	38.6	36.5	42.3	.001
Other Christian	12.4	10.4	15.9	<.001
No religious preference	16.0	14.1	19.2	<.001
Other	4.1	4.7	3.1	<.050
Father				
Catholic	34.2	40.8	32.8	<.001
Protestant	32.7	25.7	34.3	NS
Other Christian	9.2	7.2	8.5	<.001
No religious preference	16.8	17.8	16.6	<.001
Other	6.9	6.5	7.5	NS
Mother and father are married, %	38.5	59.2	3.1	<.001
Income, natural log of annual household, mean ± SD, \$				
Mother (range 0.0–13.8)	10.0 ± 1.3	10.3 ± 1.2	9.5 ± 1.3	<.001
Father (range 0.0–13.8)	10.1 ± 1.9	10.5 ± 1.2	9.4 ± 2.5	<.001

Missing data for each variable equaled ≤1%, except for the following father variables: parenting stress (8.4%), consideration of abortion (10.3%), and foreign-born status (10.1%). Bivariate associations were examined by using Pearson χ^2 tests (for binary and categorical variables) or 1-way analyses of variance (for continuous variables). Actual income data were as follows: for mothers, mean = \$39 200 (SD = \$47 222); for fathers, mean = \$46 012 (SD = \$53 593).

she had used any of 9 possible substances or had 4 drinks in 1 day within the past year. Detailed methods for scoring these items are described elsewhere.⁵¹

Remaining covariates included whether each parent considered abortion of the index child, whether the father had ever spent any time in jail or prison, and a set of family demographic variables that included the child's gender and the following demographics for both parents: age, education level, race/ethnicity, nativity, religion, marital status, and annual household income.

Statistical Analyses

Frequency distributions were generated for all study variables. Bivariate associations were examined by using χ^2 tests, analyses of variance, or Kruskal-Wallis tests of medians as appropriate and as indicated in Tables 1 and 2. Patterns of IPAV and CP were identified by using tabulation and combining appropriate cells (Table 3). Table 4 presents 2 multinomial regression models that were developed to obtain unadjusted (model 1) and adjusted (model 2) odds ratios of IPAV (4-category predictor; reference group = "neither parent") associated with parental use of CP (4-category outcome; reference group = "neither parent"). Model 2 included all covariates described already (under "Variables") and shown in Table 1. Multicollinearity was not a problem: the mean variance inflation factor was 2.6.

Use of weighted data is preferred in presenting population prevalence (Table 3). National weights were available for 1427 cases and allowed for sample design adjustment, lack of response at baseline, and loss to follow-up at wave 3. National weights were unavailable for cases from the 4 cities that were not randomly selected ($n = 513$) as well as for cases that were not randomly selected at the

TABLE 2 Descriptive and Bivariate Statistics of Family Characteristics by Use of GP: FFCWS, 2001–2004

Parameter	Total Sample (<i>N</i> = 1997)	No Parent Used CP (<i>n</i> = 693)	Only Mother Used CP (<i>n</i> = 469)	Only Father Used CP (<i>n</i> = 254)	Both Parents Used CP (<i>n</i> = 581)	<i>P</i>
Parenting risk factors						
Parenting stress score, median (95% CI)						
Mother (range: 0–3)	1.3 (1.3–1.3)	1.0 (1.0–1.3)	1.3 (1.3–1.3)	1.0 (1.0–1.0)	1.3 (1.3–1.3)	<.001
Father (range: 0–3)	1.0 (1.0–1.0)	1.0 (0.8–1.0)	1.0 (1.0–1.0)	1.0 (1.0–1.0)	1.0 (1.0–1.3)	<.001
Major depression, %						
Mother	16.0	12.0	20.0	13.4	18.6	<.001
Father	10.6	9.1	10.3	9.1	13.3	NS
Use of alcohol or other drugs, %						
Mother	14.4	10.9	15.4	12.2	18.8	<.010
Father	35.0	29.6	33.6	34.4	42.7	<.001
Considered aborting this child, %						
Mother	19.7	15.7	24.3	18.9	20.7	<.010
Father	11.9	7.5	14.9	13.4	14.1	<.001
Father ever in jail, %						
Mother's report	22.1	18.0	25.4	24.4	23.4	<.050
Father's report	14.3	11.7	14.7	16.2	16.4	
Family demographics						
Child gender (boy), %	52.7	47.8	50.1	58.3	58.4	<.001
Age, median (95% CI), y						
Mother (range: 17–48)	29 (28–29)	30 (29–31)	28 (27–29)	27 (26–29)	28 (28–29)	<.001
Father (range: 18–71)	31 (31–32)	33 (32–33)	31 (30–32)	30 (29–31)	31 (30–31)	<.001
Education, %						
Mother						<.001
Less than high school	27.5	30.5	28.8	31.9	21.0	<.001
High school	27.3	24.5	27.3	29.9	29.4	NS
Some college	26.5	21.9	28.6	26.4	30.5	<.010
College graduate	18.6	23.1	15.4	11.4	19.1	<.001
Father						<.001
Less than high school	28.5	30.6	32.8	29.9	21.9	<.001
High school	29.2	25.5	29.2	28.7	33.9	<.050
Some college	24.0	19.6	23.5	26.8	28.6	<.010
College graduate	17.6	22.9	14.0	14.6	15.5	<.001
Race/ethnicity, %						
Mother						<.001
Black	35.6	26.8	40.9	35.4	41.8	<.001
Hispanic	30.2	37.5	29.2	33.9	20.7	<.001
White	29.1	29.6	25.8	26.0	32.5	NS
Other	4.8	5.6	3.8	4.3	4.8	NS
Father						<.001
Black	38.0	29.2	41.2	39.4	45.3	<.001
Hispanic	29.7	35.9	29.0	34.7	20.8	<.001
White	27.3	29.0	25.2	22.1	29.4	NS
Other	4.5	5.5	4.3	3.5	4.0	NS
Foreign-born, %						
Mother	21.1	31.1	20.1	19.7	10.7	<.001
Father	19.6	29.4	19.8	16.5	9.0	<.001
Religion, %						
Mother						<.001
Catholic	33.7	41.0	32.2	39.8	23.4	<.001
Protestant	36.5	29.7	36.3	33.5	46.0	<.001
Other Christian	10.4	7.8	11.5	9.1	13.1	<.050
No religious preference	14.1	14.4	15.6	14.6	12.2	NS
Other	4.7	6.4	4.3	2.0	4.1	<.050
Father						<.001
Catholic	34.2	40.8	32.8	37.0	26.0	<.001
Protestant	32.7	25.7	34.3	31.5	40.3	<.001
Other Christian	9.2	7.2	8.5	11.8	11.0	<.050
No religious preference	16.8	17.8	16.6	15.8	16.2	NS
Other	6.5	7.8	6.6	2.8	6.4	.050
Mother and father are married (vs romantically involved but not married), %	59.2	59.6	53.3	57.1	64.5	<.010
Income, natural log of annual household, median (95% CI), \$						
Mother (range: 0.0–13.8)	10.5 (10.5–10.5)	10.5 (10.3–10.5)	10.4 (10.3–10.5)	10.6 (10.5–10.7)	10.5 (10.5–10.5)	NS
Father (range: 0.0–13.8)	10.6 (10.5–10.6)	10.5 (10.5–10.6)	10.5 (10.5–10.6)	10.5 (10.5–10.6)	10.7 (10.6–10.8)	NS

Missing data for each variable equaled $\leq 1\%$, except that father's consideration of abortion and father's foreign-born status each had 7.3% missing. Bivariate associations were examined by using Pearson χ^2 tests (for binary and categorical variables) or Kruskal-Wallis tests (for continuous variables). Actual income data were as follows: for mothers, mean = \$48 776 (SD = \$54 242); for fathers, mean = \$53 456 (SD = \$57 076). CI indicates confidence interval.

level of hospital or birth ($n = 57$).³² Weighted data are representative of births between 1998 and 2000 in large

US cities (ie, those with populations of >200 000 persons in 1994)³² for families who met the study eligibility criteria.

Although most of the analyses conducted took advantage of the full sample ($N = 1997$), we also presented

TABLE 3 Patterns of IPAV and Parental Use of CP Within Families by Using Unweighted and Weighted Data: FFCSW, 2001–2004

Parameter	Unweighted (<i>n</i> = 1997)		Weighted (<i>n</i> = 1427)	
	Totals Within Patterns, %	Totals for Each Pattern, %	Totals Within Patterns, %	Totals for Each Pattern, %
Co-occurring IPAV and CP				
Single aggressor		6.2		4.0
Dad to mom/dad to child	1.3		0.5	
Mom to dad/mom to child	4.9		3.5	
Sequential aggressors		9.6		6.0
Dad to mom/mom to child	5.7		3.1	
Mom to dad/dad to child	3.9		2.9	
Bilateral IPAV/single CP aggressor		11.0		14.6
Both adults/dad to child	3.9		6.8	
Both adults/mom to child	7.1		7.8	
Unilateral IPAV/dual CP aggressors		12.9		12.6
Dad to mom/both parents	4.1		2.7	
Mom to dad/both parents	8.8		9.9	
Bilateral IPAV/dual CP aggressors		9.1		8.7
Total		48.8		45.9
Non co-occurring IPAV and CP				
IPAV only		22.0		21.3
Unilateral IPAV (dad to mom)	5.4		6.4	
Unilateral IPAV (mom to dad)	8.9		8.9	
Bilateral IPAV	7.7		6.0	
CP only		16.7		18.2
Single aggressor CP (dad to child)	3.7		2.6	
Single aggressor CP (mom to child)	5.8		4.1	
Dual aggressor CP	7.2		11.5	
Total		38.7		39.5
No IPAV or CP reported		12.7		14.7
Total		100.0		100.0

weighted data (*n* = 1427) for prevalence patterns shown in Table 3. Because sampling weights can make regression analyses highly inefficient, we instead used unweighted data but accounted for the main cluster variables (city and marital status at birth) in the multinomial regression models (Table 4) as recommended by Korn and Graubard.³³

RESULTS

Descriptive and bivariate statistics for risk factors and demographics by parents' use of CP are presented in Table 2. Approximately 65% of children in the sample were spanked by 1 or both parents in the previous month: 12.7% by the father only, 23.5% by the mother only, and 29.1% by both parents. All examined parenting risks were positively associated with use of CP. Parents who were older, Hispanic,

foreign-born, or Catholic had lower-than-average risk for using CP; parents who were black had higher-than-average risk. Being married or protestant increased the risk for both parents' using CP.

IPAV was reported in ~71% of the families: 27.7% reported bilateral and 42.9% reported unilateral IPAV. Table 3 shows very similar patterns of IPAV and CP use across unweighted and weighted data; only the latter are discussed herein given their greater generalizability to a broader population. Most (85%) families reported the presence of IPAV, CP, or both, with the majority of these families reporting both. Each of the 5 proposed patterns of co-occurring IPAV and CP was present: bilateral IPAV/single CP aggressor was most common (15%) followed by unilateral IPAV/dual CP aggressors (13%),

bilateral IPAV/dual CP aggressors (9%), sequential aggressors (6%), and single aggressor (4%).

Unadjusted (model 1) and adjusted (model 2) multinomial odds ratios of IPAV associated with CP use are presented in Table 4; only model 2 is described herein. Compared with when there was no IPAV present, mothers who acted alone had nearly 2.5 times the odds of using CP when the mother was the only IPAV victim and nearly double the odds when bilateral IPAV was present. Fathers who acted alone had ~1.6 times the odds of using CP when the father was the only IPAV victim and 2.2 times the odds when bilateral IPAV was present. The odds for both parents' using CP were almost double when either parent was the only IPAV victim and more than double when both parents were IPAV victims.

There are some noteworthy patterns of association between family characteristics and CP use. Parenting stress was consistently associated with CP use for each parent. Alcohol or other drug use by either parent significantly raised the odds of both parents' using CP. The odds of a parent's using CP were greater for boys than for girls. Finally, black parents and US-born fathers had increased odds of using CP. (Note: Ninety percent of parents were cohabiting; when examined, cohabitation status was not associated with either CP or IPAV in either bivariate or regression analyses.)

DISCUSSION

This study examined co-occurrence of IPAV and CP within families. In a literature review focused on the co-occurrence of more severe aggression within families (IPAV and child physical abuse), the following recommendations were made for future studies, which are relevant for the current inquiry: (1) use population-based over clinical samples; (2) examine alternative explanations for co-occurrence

TABLE 4 Two Multinomial Regressions (Unadjusted and Adjusted) of IPAV Associated With Parental Use of CP: FFCWS, 2001–2004

Parameter	Only Mother Used CP		Only Father Used CP		Both Parents Used CP	
	OR	95% CI	OR	95% CI	OR	95% CI
Model 1: unadjusted ORs (<i>n</i> = 1997)						
IPAV						
Neither parent victim (reference)	1.00		1.00		1.00	
Mother only victim	2.32	1.79–3.00 ^a	0.83	0.47–1.48	1.36	0.91–2.04
Father only victim	1.18	0.87–1.60	1.47	1.02–2.12 ^c	1.75	1.27–2.40 ^b
Both parents victims	2.02	1.43–2.85 ^a	1.72	1.22–2.41 ^b	2.09	1.44–3.02 ^a
Model 2: adjusted ORs (<i>n</i> = 1977)						
IPAV						
Neither parent victim (reference)	1.00		1.00		1.00	
Mother only victim	2.47	1.92–3.19 ^a	1.10	0.65–1.86	1.84	1.15–2.93 ^c
Father only victim	1.21	0.83–1.76	1.57	1.13–2.19 ^b	1.83	1.28–2.63 ^b
Both parents victims	1.92	1.29–2.88 ^b	2.21	1.57–3.12 ^a	2.23	1.50–3.30 ^a
Parenting stress, PSI score						
Mother	1.44	1.14–1.84 ^b	0.89	0.67–1.17	1.37	1.09–1.71 ^b
Father	1.07	0.86–1.34	1.25	1.03–1.53 ^c	1.29	1.07–1.56 ^b
Major depression						
Mother	1.45	1.00–2.09	0.98	0.65–1.47	1.18	0.87–1.55
Father	0.90	0.55–1.45	0.76	0.42–1.42	1.08	0.81–1.45
Use of alcohol or other drugs						
Mother	1.23	0.80–1.93	0.99	0.67–1.46	1.51	1.15–1.99 ^b
Father	1.16	0.83–1.63	1.10	0.80–1.53	1.63	1.18–2.26 ^b
Considered aborting this child						
Mother	1.01	0.79–1.28	0.82	0.53–1.30	0.81	0.59–1.14
Father	1.64	1.20–2.23 ^b	1.47	0.78–2.72	1.43	0.87–2.31
Father ever in jail						
Mother's report	1.23	0.83–1.83	1.11	0.73–1.56	1.06	0.79–1.36
Family demographics						
Child gender, boy	1.20	1.01–1.42 ^c	1.73	1.27–2.35 ^a	1.69	1.42–2.02 ^a
Age						
Mother	0.97	0.95–0.99 ^c	0.99	0.95–1.02	0.98	0.96–1.00
Father	1.00	0.98–1.03	0.97	0.94–1.01	0.97	0.94–0.99 ^c
Education						
Mother						
Less than high school (reference)	1.00		1.00		1.00	
High school	1.11	0.81–1.48	0.91	0.64–1.30	1.34	0.86–2.05
Some college	1.27	0.90–1.79	0.86	0.60–1.24	1.50	0.94–2.38
College graduate	0.78	0.52–1.17	0.35	0.19–0.62 ^a	1.04	0.54–1.99
Father						
Less than high school (reference)	1.00		1.00		1.00	
High school	0.84	0.61–1.13	1.03	0.77–1.33	1.22	0.88–1.66
Some college	0.84	0.62–1.10	1.41	0.92–2.03	1.27	0.90–1.75
College graduate	0.52	0.36–0.76 ^b	1.11	0.56–2.17	0.66	0.41–1.08
Race/ethnicity of parents						
Black (reference)						
Hispanic	0.58	0.41–0.82 ^b	0.59	0.37–0.98 ^c	0.49	0.32–0.78 ^b
White	0.70	0.51–0.97 ^c	0.61	0.41–0.94 ^c	0.57	0.36–0.91 ^c
Other	0.90	0.52–1.75	0.91	0.44–1.99	0.97	0.41–2.28
Mixed	0.58	0.35–0.97 ^c	0.66	0.37–1.26	0.75	0.50–1.11
Foreign-born (vs US-born)						
Mother	0.81	0.49–1.30	0.90	0.52–1.51	0.72	0.47–1.09
Father	0.83	0.57–1.21	0.47	0.24–0.90 ^c	0.40	0.23–0.67 ^b
Religion						
Mother						
Protestant (reference)	1.00		1.00		1.00	
Catholic	0.90	0.61–1.35	1.28	0.75–2.17	0.64	0.42–0.99 ^c
Other Christian	1.11	0.76–1.65	0.91	0.54–1.57	1.02	0.67–1.53
No religious preference	0.81	0.58–1.13	0.84	0.59–1.20	0.57	0.38–0.87 ^b
Other	0.68	0.37–1.27	0.73	0.24–2.23	0.68	0.35–1.32
Father						
Protestant (reference)	1.00		1.00		1.00	
Catholic	0.83	0.56–1.23	0.91	0.51–1.57	0.80	0.60–1.07
Other Christian	0.81	0.50–1.32	1.26	0.74–2.00	1.01	0.56–1.82
No religious preference	0.68	0.46–1.00	0.66	0.38–1.15	0.59	0.38–0.92 ^c
Other	0.90	0.42–1.95	0.38	0.10–2.01	0.89	0.45–1.76
Mother and father are married (vs romantically involved but not married)	1.08	0.76–1.53	1.28	0.77–2.05	1.68	1.22–2.33 ^b
Annual household income						
Mother	1.01	0.88–1.16	0.95	0.85–1.06	0.95	0.85–1.06
Father	1.19	1.01–1.39 ^c	1.12	0.99–1.27	1.08	0.95–1.24

Model 1 is an unadjusted (bivariate) analysis of IPAV (4 categories; reference = "neither parent IPAV victim") by CP (4 categories; reference = "neither parent used CP"). Model 2 is an adjusted (multivariate) analysis of IPAV by CP, adjusted for all parenting risk and demographic characteristics described in Table 2. Both models were adjusted for 2 key variables used in the sampling design: marital status at birth (married or unmarried) and city. Missing data for each variable equaled $\leq 1\%$, except that father's consideration of abortion and father's foreign-born status each had 7.3% missing. OR indicates odds ratio; CI, confidence interval; PSI, Parenting Stress Index.

^a $P < .001$.

^b $P < .01$.

^c $P < .05$.

(eg, account for potential confounders); (3) use multiple informants including reports by fathers; (4) specify who aggressed against the child; and (5) “the greatest need is to test the different models of co-occurrence.” (p. 595)¹⁷ In our previous study of co-occurrence, which looked at IPAV and CP as well as child physical abuse, psychological abuse, and neglect, we found support for a “sequential aggressors” model (father to mother and mother to child aggression); however, we addressed only recommendations 1 and 2 above.⁶ This study aimed to address all 5 noted recommendations with a primary focus on assessing multiple models of co-occurrence. We found the “single aggressor” model to be least prevalent; and consistent with similar studies,^{18,34} patterns involving both parents as aggressors were most prevalent.

The presence of even minor forms of aggression between parents, such as criticism and controlling behaviors, were linked with increased odds of using CP with young children. These findings may be explained, in part, through Patterson’s³⁵ theory of coercive family process, a theory that is based in operant conditioning and suggests that family aggression may escalate from initial small aversive events and that such escalation occurs via positive reinforcement.³⁶ This process suggests that escalation of aggression between a dyad is likely, lending support to our finding that the single aggressor pattern was least prevalent. Also relevant is Bandura’s³⁷ social cognitive theory, which focuses on the importance of observational learning and the normalization of behavior within a particular environment and supports empirical findings regarding an intergenerational cycle of IPAV.³⁸ This study and others^{18,39} suggested an intrafamilial cycle of aggression in which bilateral IPAV is associated with in-

creased risk for parental aggression directed toward a child. The adult IPAV victim, in particular, has increased odds of using CP.

The current study has some important limitations. First is the dichotomization of IPAV and CP and the cross-sectional nature of the data point to the need for future studies that provide a more nuanced understanding of these linkages. We did not differentiate in terms of the context, severity, chronicity, sequencing, or escalation of family aggression over time. This level of detail would aid in developing a more precise model of co-occurring family aggression and risk.

Second, the questions used to assess IPAV were not comprehensive in assessing all forms of IPAV⁴⁰; however, given that verbal aggression is more common than physical aggression among families who are at risk for maltreatment³⁴ as well as in population-based samples, this measure may be more relevant for informing efforts to prevent CP than 1 that is more inclusive of more physical and severe forms of violence.

Third, all study variables were based on self-reports, which may be subject to recall, social desirability, and other types of bias; however, parents needed only to recall any use of CP within the previous month, which should have helped to minimize recall bias for that key variable.

Finally, although this study took into account many key covariates and potential confounders, some important ones may be missing. Of particular importance is the lack of information regarding both parents’ exposure to violence and aggression in their families of origin. Other unmeasured potential confounders are mentioned in the second paragraph of the introduction.

CONCLUSIONS

Even minor forms of aggression and conflict between parents, such as criticism and controlling behaviors, were linked with increased odds of parents’ using CP with young children. Given the American Academy of Pediatrics’s recommendations regarding CP and the risks that CP poses to children, pediatricians who are concerned with even minor aggression between parents might also be concerned with parental discipline strategies in such families. Assumptions of “single aggressor” patterns within families may be detrimental to the child given that adult victims of IPAV have increased odds of using CP with their children. Assessments of family aggression and violence should consider and explore the multiple complex patterns of family aggression that are possible. Efforts to promote positive, noncoercive, and nonviolent communication and conflict resolution between parents may reduce the odds of parents’ using CP and thereby reduce risk for additional harm to the child.

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*Physical violence also was examined separately; however, reports were too rare to draw any mean-

ingful conclusions from multivariate analyses or for practice-based implications.

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An Ancient Chinese Fungus Becomes an Oral Medication for Multiple Sclerosis: *In June, a Food and Drug Administration expert panel unanimously recommended that fingolimod be approved as the first oral medicine for treatment of multiple sclerosis. According to an article in The Wall Street Journal (Landers P, June 22, 2010), the drug is derived from a group of Asian fungi known in Chinese and Japanese as “winter-insect-summer plant.” This fungus attacks insects in the winter killing them by summer so that their corpses can become repositories for more fungus to bloom. The fungus apparently stops the inflammatory response in the insect and this mechanism is thought to parallel what it can do in quieting an autoimmune reaction in a patient with multiple sclerosis. Trials to date have shown that it reduces the number of relapses in thousands of patients with the only side effects reported being a reduced heart rate on the first day of use and in rare cases swelling in the eye. The FDA is to make a final decision by the fall, and usually follows the recommendation of its expert panel. The drug’s mechanism of action is not to destroy immune cells attacking the protective covering around nerve fibers, but to prevent immune cells from overreacting so they don’t even rev up to go to the nerve fibers in the first place. More news on this drug will certainly be forthcoming in the months ahead.*

Noted by JFL, MD

Use of Spanking for 3-Year-Old Children and Associated Intimate Partner Aggression or Violence

Catherine A. Taylor, Shawna J. Lee, Neil B. Guterman and Janet C. Rice

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