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OFFICIAL JOURNAL OF THE AMERICAN ACADEMY OF PEDIATRICS

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Pediatrics; originally published online July 2, 2012;
DOI: 10.1542/peds.2011-2947

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American Academy of Pediatrics

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Physical Punishment and Mental Disorders: Results From a Nationally Representative US Sample

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KEY WORDS

child abuse, child neglect, mental disorders, mental health, personality disorders

ABBREVIATIONS

aOR—adjusted odds ratio

CI—confidence interval

NESARC—National Epidemiologic Survey on Alcohol and Related Conditions

PAF—population-attributable fraction

Drs Afifi and Sareen contributed to the development of the research questions, design of the study, supervision of the analysis, interpretation of the data, writing of the manuscript, and revising of the manuscript; Ms Mota and Dasiewicz contributed to the development of the research questions, design of the study, data analysis, interpretation of the data, writing of the manuscript, and revising of the manuscript; and Dr MacMillan contributed to the theoretical rationale for the study, expert consultation regarding physical punishment terminology used in the manuscript, consultation on statistical models, manuscript revisions, and writing of the revised manuscript.

www.pediatrics.org/cgi/doi/10.1542/peds.2011-2947

doi:10.1542/peds.2011-2947

Accepted for publication Apr 2, 2012

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PEDIATRICS (ISSN Numbers: Print, 0031-4005; Online, 1098-4275).

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FINANCIAL DISCLOSURE: *The authors have indicated they have no financial relationships relevant to this article to disclose.*

FUNDING: Supported by a Manitoba Medical Services Foundation award (Dr Afifi), a Winnipeg Foundation award (Dr Afifi), a Manitoba Health Research Council establishment award (Dr Afifi), a Canadian Institutes of Health Research New Investigator award (152348 to Dr Sareen), and a Manitoba Health Research Council Chair Award (Dr Sareen). Dr MacMillan is supported by the David R. (Dan) Offord Chair in Child Studies.



WHAT'S KNOWN ON THIS SUBJECT: Physical punishment is associated with aggression, delinquency, and internalizing conditions in childhood, as well as a range of Axis I mental disorders in adulthood. More research is needed on the possible long-term relationship between physical punishment and mental health.



WHAT THIS STUDY ADDS: To our knowledge, this is the first nationally representative examination of physical punishment and a range of Axis I and II disorders, gender interactions, and proportion of mental disorders in the general population that may be attributable to physical punishment.

abstract

FREE

BACKGROUND: The use of physical punishment is controversial. Few studies have examined the relationship between physical punishment and a wide range of mental disorders in a nationally representative sample. The current research investigated the possible link between harsh physical punishment (ie, pushing, grabbing, shoving, slapping, hitting) in the absence of more severe child maltreatment (ie, physical abuse, sexual abuse, emotional abuse, physical neglect, emotional neglect, exposure to intimate partner violence) and Axis I and II mental disorders.

METHODS: Data were from the National Epidemiologic Survey on Alcohol and Related Conditions collected between 2004 and 2005 ($N = 34\ 653$). The survey was conducted with a representative US adult population sample (aged ≥ 20 years). Statistical methods included logistic regression models and population-attributable fractions.

RESULTS: Harsh physical punishment was associated with increased odds of mood disorders, anxiety disorders, alcohol and drug abuse/dependence, and several personality disorders after adjusting for sociodemographic variables and family history of dysfunction (adjusted odds ratio: 1.36–2.46). Approximately 2% to 5% of Axis I disorders and 4% to 7% of Axis II disorders were attributable to harsh physical punishment.

CONCLUSIONS: Harsh physical punishment in the absence of child maltreatment is associated with mood disorders, anxiety disorders, substance abuse/dependence, and personality disorders in a general population sample. These findings inform the ongoing debate around the use of physical punishment and provide evidence that harsh physical punishment independent of child maltreatment is related to mental disorders. *Pediatrics* 2012;130:1–9

Physical punishment (also referred to as spanking, smacking, and corporal punishment) involves acts of hitting a child as a means of discipline. The parent or caregiver's right to use physical punishment has currently been abolished in 32 nations; Canada and the United States are not included among these countries.¹ Physical punishment has been a commonly used method of discipline in North America and is considered socially acceptable by many caregivers.^{2,3} In a US sample of the Carolinas, for example, 46% of mothers reported slapping or spanking in the past year.⁴ An examination of nationally representative US data indicated that 48% of adults retrospectively reported a history of physical punishment (having something thrown at them or being pushed, grabbed, shoved, slapped, or spanked) without having experienced more severe physical or sexual abuse.⁵

It is well established that child maltreatment (ie, physical abuse, sexual abuse, emotional maltreatment, physical and emotional neglect) is associated with adult Axis I and II mental disorders.^{6–17} Evidence about the negative long-term outcomes associated with child maltreatment could provide insights into understanding why physical punishment is associated with impairment and provides the theoretical perspective for the current study.¹⁸ Although only a few representative studies have been conducted on the relationship between physical punishment and specific mental disorders, theoretically similar associations found in the child maltreatment literature would be expected for physical punishment because physical punishment and child maltreatment are not separate and unrelated dichotomies but rather varying degrees of physical force used on children found along a continuum of increasing severity ranging from no physical acts to severe child maltreatment.^{2,5,19} It is also important to recognize that there can be

considerable overlap between the 2 types of exposure; depending on the age, developmental stage, and level of force used, there is considerable agreement that certain types of physical punishment constitute abuse (eg, spanking an infant aged <6 months or a teenager). The literature from the past 20 years indicates that the associated impairments of physical punishment are broad and enduring,²⁰ just like the broad associations found in the literature on child maltreatment. In addition, perhaps the experience of physical punishment, even if not “physically abusive,” may generate acute or chronic stress through experiences of anxiety, fear, and shame, among others, that are associated with physiologic and emotional dysregulation²¹ and characteristic of a range of Axis I and II psychopathologic conditions. As with maltreatment, genetic variability may account for some of the differences in specific impairment associated with exposure.^{22–24}

Reviews of the literature have indicated that physical punishment is related to higher levels of aggression, delinquency, and internalizing conditions in addition to lower levels of internalizing morals and overall mental health.^{25,26} There is some evidence that physical punishment is also associated with immediate compliance.^{24,25} Many studies have found a link between physical punishment and poor child and adolescent social, emotional, cognitive, developmental, and behavioral problems or impairment.^{27–33} There is also evidence for an association between physical punishment and poor adult mental health outcomes. For example, physical punishment has been associated with depressive symptoms in US college samples.^{34–36} Results from a US community survey indicated that physical punishment in the teenage years significantly increased the likelihood of depression, suicidal thoughts, and alcohol abuse in adulthood.² Similarly, 2 other studies involving representative

adult samples found that physical punishment was associated with adult depression,⁵ anxiety disorders,¹⁹ alcohol abuse/dependence,^{5,19} and externalizing problems^{5,19} independent of the effects of child physical or sexual abuse.

Despite increasing evidence regarding the impairment associated with physical punishment, some researchers suggest that the findings linking physical punishment with harmful outcomes are based on flawed studies with weaknesses in design, measurement, and analysis, including the lack of statistical adjustment for confounding factors.^{37–39} An important consideration in this research is accounting for the confounding effects of child maltreatment. In addition, gender may have a moderating effect on physical punishment with regard to mental disorders, as is the case for child maltreatment.¹⁴ Furthermore, poor parental mental health may be a possible confounding factor requiring statistical adjustment in the relationship between physical punishment and mental disorders. Lower levels of parental emotional well-being have been associated with an increased likelihood of spanking young children,⁴⁰ and parental mental disorders may increase the likelihood of mental disorders among offspring.⁴¹

To our knowledge, there have been no examinations of the link between physical punishment and a broad range of mental health disorders in a nationally representative sample controlling for several types of child maltreatment. Previous studies have not considered the proportion of mental disorders in the general population that may be attributable to physical punishment alone without experiencing more severe forms of child maltreatment. Such information would be useful for pediatricians and other health care providers to consider when making recommendations to parents on the use of physical punishment.

The main objectives for the current study were to determine if physical punishment increases the likelihood of having Axis I and II mental disorders and what proportion of mental disorders in the general population is attributable to physical punishment. It was hypothesized that a history of physical punishment would be linked to Axis I and II mental disorders, a significant proportion of mental disorders would be attributable to physical punishment independent of child maltreatment and other family history of dysfunction, and that gender would be a moderator in these noted relationships. The current study addresses important limitations of previous research: (1) the effect of physical punishment was examined in the absence of child maltreatment; (2) a range of Axis I and II mental disorders previously not considered were included; (3) the proportion of mental disorders that may be attributable to physical punishment was estimated; and (4) a large nationally representative sample was used that allowed for the examination of gender as a possible moderator. Notably, this is the first nationally representative examination of physical punishment and Axis II personality disorders.

METHODS

Survey

The National Epidemiologic Survey on Alcohol and Related Conditions (NESARC) involves a representative sample of civilian, noninstitutionalized adults residing in the United States. Data for the current study came from the second wave of the NESARC collected between 2004 and 2005. This survey included adults ages ≥ 20 years living in households and various noninstitutional group dwellings ($N = 34\ 653$). Survey interviews were conducted face-to-face by trained lay interviewers of the US Census Bureau, and the response rate was 86.7%. Additional details of the NESARC have been described elsewhere.⁴²

Measures

Harsh Physical Punishment and Child Maltreatment

Childhood physical punishment was assessed as part of a range of childhood maltreatment experiences (events occurring before age 18 years) that were included in the NESARC. These questions were adapted from those used in the Adverse Childhood Experiences Study,^{43,44} which consisted of a subset of items from the Conflict Tactics Scale^{45,46} and the Childhood Trauma Questionnaire.⁴⁷ Most questions were based on a 5-point Likert scale (never, almost never, sometimes, fairly often, and very often). The types of child maltreatment that were assessed included physical punishment, physical abuse, emotional abuse, sexual abuse, emotional neglect, physical neglect, and exposure to intimate partner violence (eg, having a battered mother). The questions used in assessing emotional neglect used a different 5-point Likert scale (never true, rarely true, sometimes true, often true, and very often true).

Physical punishment was assessed with the question, "As a child how often were you ever pushed, grabbed, shoved, slapped or hit by your parents or any adult living in your house?" Respondents who reported an answer of "sometimes" or greater to this event were considered as having experienced harsh physical punishment. The term harsh physical punishment was used for this study because the measure includes acts of physical force beyond slapping, which some may consider more severe than "customary" physical punishment (ie, spanking). Furthermore, to ensure that physical punishment was considered in the absence of more severe child maltreatment, respondents who endorsed severe physical abuse, sexual abuse, emotional abuse, physical neglect, emotional neglect, or exposure to intimate partner violence were excluded from the current sample. Severe

physical abuse was defined as being hit so hard it left marks, bruises, or caused an injury. Sexual abuse was defined as any unwanted sexual touching or fondling, attempted intercourse, or actual intercourse by any adult or other person that was unwanted or occurred when the respondent was too young to understand what was happening. Emotional abuse was defined as the following acts occurring fairly often or very often: being sworn at or insulted, threatening to have something thrown at the respondent, or any other act that made the respondent afraid. Physical neglect included being left unsupervised when too young or going without needed clothing, school supplies, food, or medical treatment. Emotional neglect was defined as not being in a close-knit family or having a family member make the respondent feel special, provide strength or support, or want them to succeed. Exposure to intimate partner violence was defined as having a mother who was physically abused, including acts such as hitting, slapping, repeatedly being hit for several minutes, or being threatened with a knife or gun.

Sociodemographic Covariates

The sociodemographic variables included as covariates in logistic regression models were as follows: gender, age (continuous variable), marital status (married/living common law, separated/divorced/widowed, and never married/single), race/ethnicity (Hispanic, non-Hispanic white, non-Hispanic black, non-Hispanic American Indian/Alaska Native, non-Hispanic Hawaiian/Pacific Islander), level of education (continuous variable), and past year household income (continuous variable).

Family History of Dysfunction

Family history of dysfunction was assessed with questions based on the Adverse Childhood Experiences Study.^{43,44} Family history of dysfunction included whether a parent or other adult in the

household had 1 or more of the following: (1) had a problem with alcohol or drugs; (2) went to jail or prison; (3) was treated or hospitalized for a mental illness; (4) attempted suicide; and/or (5) died by suicide.

Axis I and Axis II Disorders

Lifetime diagnoses of Axis I and Axis II disorders were made by using the Alcohol Use Disorder and Associated Disabilities Interview Schedule IV,^{48,49} a fully structured interview that has been shown to be both valid and reliable.^{50,51} Axis I disorders included major depression, dysthymia, mania, hypomania, any mood disorder, panic disorder with or without agoraphobia, social phobia, specific phobia, generalized anxiety disorder, posttraumatic stress disorder, agoraphobia, any anxiety disorder, any alcohol abuse/dependence, and any drug abuse/dependence. Axis II personality disorders were examined individually and in clusters. Clusters included the presence of 1 or more individual personality disorder and were divided as follows: cluster A (paranoid, schizoid, schizotypal), cluster B (antisocial, histrionic, borderline, narcissistic), and cluster C (avoidant, dependent, obsessive-compulsive). These clusters are based on *Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition* classification determined by similarities of symptoms.⁵²

Statistical Analysis

Statistical weights were applied in all analyses to ensure that the NESARC data were representative of the general US population. To account for the complex survey design of the NESARC, Taylor series linearization was used as a variance estimation technique by using SUDAAN software Version 10.⁵³ First, descriptive statistics and logistic regressions were computed to understand the sociodemographic distribution of the sample. Second, logistic regression

models were computed to understand the relationship between physical punishment (without experiencing child maltreatment) and Axis I and II mental disorders. Models were first adjusted for sociodemographic variables (adjusted odds ratio [aOR-1]) and then further adjusted for family history of dysfunction (aOR-2). Third, population-attributable fractions (PAFs) were calculated for each significant association between physical punishment and mental disorders for the most adjusted models. PAFs represent an estimate of the proportion of the outcome that would be decreased if the exposure had not occurred.⁵⁴

Finally, gender differences according to physical punishment interactions were examined in relation to Axis I and II disorders. Data provided include 99.9% confidence intervals (CIs) for all models. *P* values of <.01 are also provided.

RESULTS

The prevalence of harsh physical punishment alone without experiencing more severe child maltreatment was 5.9%. Table 1 presents the sociodemographic distribution among the harsh physical punishment and no physical punishment groups. Females compared with males were less likely to experience harsh physical punishment. Compared with being white, black individuals had increased odds of harsh physical punishment, whereas Asian, Native Hawaiian, and other Pacific Islander respondents had decreased odds of experiencing harsh physical punishment. Increases in education level and income level were both associated with increased odds of harsh physical punishment. Marital status categories and mean age did not differ in the nonphysical punishment group versus the harsh physical punishment group. Finally, individuals with a family history of dysfunction were more likely to experience harsh physical punishment. Table 2 presents the

relationships between harsh physical punishment and Axis I disorders. In the models adjusted for sociodemographic variables, harsh physical punishment was associated with an increased likelihood of most lifetime mental disorders, including major depression, dysthymia, mania, any mood disorder, specific phobia, any anxiety disorder, and any alcohol and drug abuse or dependence (aOR-1: 1.36–2.08). All of these relationships remained significant after further adjusting for any family history of dysfunction, with the exception of social phobia (aOR-2: 1.36–1.93). PAFs for this latter statistical model ranged from 2.1% for any anxiety disorder to 5.2% for mania. There were no significant gender by harsh physical punishment interactions for Axis I disorders.

Table 3 shows the associations between harsh physical punishment and Axis II disorders. In the statistical model adjusted for sociodemographic variables, harsh physical punishment was associated with an increased likelihood of several individual personality disorders (aOR-1: 1.63–2.46), as well as any cluster A and B disorder diagnosis (aOR-1: 1.82–1.94). When models were additionally adjusted for any family history of dysfunction, the relationships between harsh physical punishment and schizoid and obsessive-compulsive personality disorders no longer reached statistical significance. PAFs ranged from 4.2% for any Cluster A disorder to 7.2% for schizotypal personality disorder. There were no significant gender by harsh physical punishment interactions.

DISCUSSION

The current findings advance our knowledge of the relationship between harsh physical punishment and mental disorders in several novel ways. First, the findings indicate that harsh physical punishment in the absence of child maltreatment is associated with increased odds of having several lifetime Axis I and II

TABLE 1 Sociodemographic Profile of Respondents Without and With Physical Punishment

| Characteristic | No Physical Punishment (<i>n</i> = 19 349; 94.1% [93.7–94.5]) | Physical Punishment (<i>n</i> = 1258; 5.9% [5.5–6.3]) | Odds Ratio (99.9% CI) |
|--|--|--|--------------------------|
| Gender | | | |
| Male | 8110 (47.7) | 663 (59.4) | 1.00 |
| Female | 11 249 (52.3) | 595 (40.6) | 0.62 (0.50–0.79)*** |
| Marital status | | | |
| Married/cohabitating | 10 739 (64.3) | 744 (69.0) | 1.00 |
| Widowed/divorced/separated | 4837 (17.7) | 281 (15.2) | 0.80 (0.61–1.05)** |
| Never married | 3773 (18.0) | 233 (15.9) | 0.82 (0.59–1.14) |
| Race/ethnicity | | | |
| White | 11 712 (73.1) | 738 (72.1) | 1.00 |
| Black | 3432 (10.1) | 300 (14.7) | 1.47 (1.01–2.16)*** |
| American Indian/Alaska Native | 262 (1.8) | 14 (1.9) | 1.06 (0.34–3.35) |
| Asian/Native Hawaiian/Other Pacific Islander | 563 (4.4) | 12 (1.4) | 0.31 (0.13–0.74)*** |
| Hispanic | 3380 (10.6) | 194 (10.0) | 0.95 (0.63–1.44) |
| Education | | | |
| Less than high school | 2820 (12.7) | 139 (8.8) | 1.00 |
| High school | 5334 (27.5) | 347 (29.0) | 1.53 (1.01–2.32)*** |
| Some college | 3989 (21.0) | 300 (23.1) | 1.59 (1.07–2.37)*** |
| Completed postsecondary degree | 7206 (38.8) | 472 (39.2) | 1.47 (0.99–2.17)** |
| Past year household income, \$ | | | |
| ≤19 999 | 4228 (17.3) | 183 (11.4) | 1.00 |
| 20 000–39 999 | 4894 (23.7) | 299 (21.9) | 1.40 (0.96–2.05)** |
| 40 000–69 999 | 4978 (27.1) | 352 (29.0) | 1.63 (1.10–2.42)*** |
| >70 000 | 5249 (31.9) | 424 (37.7) | 1.79 (1.26–2.57)*** |
| Any family history of dysfunction | | | |
| No | 16 257 (84.2) | 937 (75.6) | 1.00 |
| Yes | 3075 (15.9) | 320 (24.4) | 1.71 (1.28–2.29)*** |
| Age, mean ± SE, y | 48.4 ± 0.21 | 48.7 ± 0.69 | 1.00 (0.99–1.01) |

Data are presented as *n* (%) or mean ± SE. All *n* values were unweighted, and all percentages were weighted.

*** *P* < .001;

** *P* < .01.

disorders after adjusting for socio-demographic variables and family history of dysfunction. Second, an approximate reduction of 2% to 5% for Axis I disorders and 4% to 7% for Axis II disorders may be noted in the general population if harsh physical punishment in the absence of child maltreatment did not occur.

The prevalence of harsh physical punishment in this study (~6%) was lower compared with other general population samples (48%–80%),^{5,19} likely due to inclusion of physical acts harsher than spanking alone, stricter inclusion criteria for physical punishment including occurrence of at least sometimes or greater (ie, not including rare frequency), and only including physical punishment cases in the absence of several types of more severe child maltreatment. A

surprising finding was that increases in education and income were associated with elevated odds of harsh physical punishment. Past research on physical punishment and Axis I disorders has found significant links with physical punishment and depression, anxiety disorders, substance abuse/dependence, and externalizing disorders.^{2,5,19} Findings from this study are consistent with past research but expand the types of impairment to include several additional Axis I disorders as well as Axis II personality disorders.

The estimated PAFs for harsh physical punishment and Axis I and II disorders were relatively small in size, but they still contribute to a significant proportion of mental disorders in the general population. More specifically, the

results indicate that if harsh physical punishment did not occur, the prevalence of Axis I and II disorders might have been reduced by ~2% to 7%.

Findings from this research should be considered in light of several important limitations. First, the cross-sectional design precludes determining any causal inferences in the relationship between harsh physical punishment and mental disorders. Second, data on harsh physical punishment and child maltreatment were collected retrospectively, which may introduce some sampling error due to recall and reporting bias. However, there is evidence that supports the validity of accurate recall of adverse childhood events⁵⁵ and that psychopathology is not linked to less reliable or less valid self-reported data on adverse childhood experiences.⁵⁶ Finally, the measure of parental psychopathology relied on the respondent's retrospective recall and understanding of a parent having problems with alcohol or drugs or being treated or hospitalized for mental illness. Confirmation through clinical records or data collected from the parents would have improved the research design. Longitudinal and prospective data collection in a representative general population sample would generate data that could improve on these noted limitations of the current study.

These research findings have several important implications for clinical practice and policy. First, it is important for pediatricians and other health care providers who work with children and parents to be aware of the link between physical punishment and mental disorders based on this study, which adds to the growing literature about the adverse outcomes associated with exposure to physical punishment. The American Academy of Pediatrics strongly opposes striking a child for any reason,⁵⁷ and the Canadian Pediatric Society recommends that physicians strongly

TABLE 2 Associations Between Physical Punishment and Axis I Mental Disorders

| Psychiatric Disorders | No Physical Punishment (<i>n</i> = 19 349; 94.1% [93.3–94.8]) | Physical Punishment (<i>n</i> = 1258; 5.9% [5.2–6.7]) | PAF (99.9% CI) | Gender by Physical Punishment Interactions |
|--|---|---|----------------|--|
| Major depression | | | | |
| <i>n</i> (%) | 3259 (16.1) | 261 (19.8) | — | — |
| aOR-1 (99.9% CI) | 1.00 | 1.48 (1.09–2.01)*** | — | — |
| aOR-2 (99.9% CI) | 1.00 | 1.41 (1.03–1.92)*** | 2.4 (0.2–5.1) | 1.28 (0.67–2.43) |
| Dysthymia | | | | |
| <i>n</i> (%) | 632 (3.0) | 60 (4.6) | — | — |
| aOR-1 (99.9% CI) | 1.00 | 1.78 (0.95–3.34)** | — | — |
| aOR-2 (99.9% CI) | 1.00 | 1.70 (0.89–3.23)** | — | 0.95 (0.23–3.97) |
| Mania | | | | |
| <i>n</i> (%) | 569 (2.9) | 61 (5.3) | — | — |
| aOR-1 (99.9% CI) | 1.00 | 2.08 (1.18–3.66)*** | — | — |
| aOR-2 (99.9% CI) | 1.00 | 1.93 (1.07–3.48)*** | 5.2 (0.4–12.8) | 0.85 (0.26–2.75) |
| Hypomania | | | | |
| <i>n</i> (%) | 573 (2.9) | 44 (3.2) | — | — |
| aOR-1 (99.9% CI) | 1.00 | 1.24 (0.68–2.25) | — | — |
| aOR-2 (99.9% CI) | 1.00 | 1.23 (0.67–2.25) | — | 1.07 (0.29–3.93) |
| Any mood disorder | | | | |
| <i>n</i> (%) | 3840 (19.1) | 320 (24.4) | — | — |
| aOR-1 (99.9% CI) | 1.00 | 1.56 (1.17–2.08)*** | — | — |
| aOR-2 (99.9% CI) | 1.00 | 1.49 (1.11–2.00)*** | 2.8 (0.6–5.6) | 1.15 (0.65–2.04) |
| Panic disorder with or without agoraphobia | | | | |
| <i>n</i> (%) | 1003 (5.2) | 80 (6.0) | — | — |
| aOR-1 (99.9% CI) | 1.00 | 1.32 (0.78–2.22) | — | — |
| aOR-2 (99.9% CI) | 1.00 | 1.24 (0.74–2.10) | — | 1.65 (0.56–4.86) |
| Social phobia | | | | |
| <i>n</i> (%) | 952 (5.0) | 73 (5.5) | — | — |
| aOR-1 (99.9% CI) | 1.00 | 1.20 (0.74–1.96) | — | — |
| aOR-2 (99.9% CI) | 1.00 | 1.13 (0.69–1.85) | — | 0.67 (0.24–1.82) |
| Specific phobia | | | | |
| <i>n</i> (%) | 2496 (12.3) | 199 (14.7) | — | — |
| aOR-1 (99.9% CI) | 1.00 | 1.36 (1.00–1.85)*** | — | — |
| aOR-2 (99.9% CI) | 1.00 | 1.31 (0.96–1.79)** | — | 0.97 (0.49–1.91) |
| General anxiety disorder | | | | |
| <i>n</i> (%) | 1015 (5.2) | 83 (7.0) | — | — |
| aOR-1 (99.9% CI) | 1.00 | 1.58 (0.94–2.65)** | — | — |
| aOR-2 (99.9% CI) | 1.00 | 1.50 (0.89–2.51)** | — | 1.21 (0.37–3.90) |
| PTSD | | | | |
| <i>n</i> (%) | 805 (3.7) | 64 (4.1) | — | — |
| aOR-1 (99.9% CI) | 1.00 | 1.22 (0.76–1.96) | — | — |
| aOR-2 (99.9% CI) | 1.00 | 1.17 (0.73–1.88) | — | 1.46 (0.49–4.32) |
| Any anxiety disorder ^a | | | | |
| <i>n</i> (%) | 4477 (22.3) | 355 (26.7) | — | — |
| aOR-1 (99.9% CI) | 1.00 | 1.41 (1.09–1.83)*** | — | — |
| aOR-2 (99.9% CI) | 1.00 | 1.36 (1.05–1.77)*** | 2.1 (0.3–4.3) | 1.08 (0.62–1.89) |
| Any alcohol abuse or dependence | | | | |
| <i>n</i> (%) | 5461 (30.2) | 515 (43.2) | — | — |
| aOR-1 (99.9% CI) | 1.00 | 1.65 (1.25–2.17)*** | — | — |
| aOR-2 (99.9% CI) | 1.00 | 1.59 (1.21–2.08)*** | 3.4 (1.2–6.0) | 1.04 (0.60–1.79) |
| Any drug dependence or abuse | | | | |
| <i>n</i> (%) | 1359 (8.7) | 160 (12.9) | — | — |
| aOR-1 (99.9% CI) | 1.00 | 1.61 (1.12–2.32)*** | — | — |
| aOR-2 (99.9% CI) | 1.00 | 1.53 (1.06–2.20)*** | 3.0 (0.4–6.6) | 1.07 (0.46–2.48) |

All *n* values were unweighted, and all percentages were weighted. aOR-1, adjusted for gender, age, marital status, race/ethnicity, education, and household income; aOR-2, adjusted for age, marital status, race/ethnicity, education, household income, and any family history of dysfunction; PTSD, posttraumatic stress disorder.

^a Agoraphobia was included in the any anxiety disorder and any mental disorder summary variables. However, it was not analyzed in relation to physical punishment individually due to a cell size <5.

*** *P* ≤ .001;

** *P* ≤ .01.

TABLE 3 Associations Between Physical Punishment and Axis II Disorders

| Psychiatric Disorder | No Physical Punishment or Child Maltreatment (<i>n</i> = 19 349; 94.1% [93.3–94.8]) | Physical Punishment Without Child Maltreatment (<i>n</i> = 1258; 5.9% [5.2–6.7]) | PAF (99.9% CI) | Gender by Physical Punishment Interactions |
|---|--|---|----------------|--|
| Paranoid personality disorder | | | | |
| <i>n</i> (%) | 532 (2.5) | 56 (3.4) | — | — |
| aOR-1 (99.9% CI) | 1.00 | 1.45 (0.78–2.70) | — | — |
| aOR-2 (99.9% CI) | 1.00 | 1.39 (0.74–2.62) | — | 1.00 (0.29–3.48) |
| Schizoid personality disorder | | | | |
| <i>n</i> (%) | 417 (1.9) | 53 (3.6) | — | — |
| aOR-1 (99.9% CI) | 1.00 | 1.88 (1.02–3.46)*** | — | — |
| aOR-2 (99.9% CI) | 1.00 | 1.80 (0.97–3.33)** | — | 1.39 (0.38–5.06) |
| Schizotypal personality disorder | | | | |
| <i>n</i> (%) | 368 (1.7) | 49 (3.9) | — | — |
| aOR-1 (99.9% CI) | 1.00 | 2.46 (1.32–4.57)*** | — | — |
| aOR-2 (99.9% CI) | 1.00 | 2.31 (1.24–4.31)*** | 7.2 (1.4–16.3) | 0.81 (0.22–2.97) |
| Any cluster A personality disorder | | | | |
| <i>n</i> (%) | 1116 (5.3) | 127 (8.8) | — | — |
| aOR-1 (99.9% CI) | 1.00 | 1.82 (1.18–2.81)*** | — | — |
| aOR-2 (99.9% CI) | 1.00 | 1.74 (1.13–2.69)*** | 4.2 (0.8–9.1) | 0.81 (0.34–1.92) |
| Antisocial personality disorder | | | | |
| <i>n</i> (%) | 333 (1.9) | 46 (4.1) | — | — |
| aOR-1 (99.9% CI) | 1.00 | 2.06 (1.06–3.98)*** | — | — |
| aOR-2 (99.9% CI) | 1.00 | 1.98 (1.03–3.82)*** | 5.5 (0.2–14.3) | 0.91 (0.16–5.09) |
| Borderline personality disorder | | | | |
| <i>n</i> (%) | 543 (2.7) | 70 (4.7) | — | — |
| aOR-1 (99.9% CI) | 1.00 | 1.97 (1.13–3.44)*** | — | — |
| aOR-2 (99.9% CI) | 1.00 | 1.82 (1.04–3.20)*** | 4.6 (0.2–11.5) | 1.23 (0.41–3.70) |
| Histrionic personality disorder | | | | |
| <i>n</i> (%) | 207 (1.0) | 22 (1.7) | — | — |
| aOR-1 (99.9% CI) | 1.00 | 1.89 (0.78–4.59) | — | — |
| aOR-2 (99.9% CI) | 1.00 | 1.83 (0.74–4.52) | — | 0.83 (0.12–5.78) |
| Narcissistic personality disorder | | | | |
| <i>n</i> (%) | 789 (3.7) | 104 (7.3) | — | — |
| aOR-1 (99.9% CI) | 1.00 | 1.91 (1.17–3.12)*** | — | — |
| aOR-2 (99.9% CI) | 1.00 | 1.84 (1.13–3.00)*** | 4.7 (0.8–10.6) | 1.28 (0.48–3.36) |
| Any cluster B personality disorder | | | | |
| <i>n</i> (%) | 1520 (7.7) | 190 (13.9) | — | — |
| aOR-1 (99.9% CI) | 1.00 | 1.94 (1.31–2.88)*** | — | — |
| aOR-2 (99.9% CI) | 1.00 | 1.85 (1.25–2.74)*** | 4.8 (1.5–9.3) | 1.08 (0.52–2.22) |
| Avoidant personality disorder | | | | |
| <i>n</i> (%) | 262 (1.3) | 22 (1.8) | — | — |
| aOR-1 (99.9% CI) | 1.00 | 1.58 (0.53–4.66) | — | — |
| aOR-2 (99.9% CI) | 1.00 | 1.53 (0.52–4.52) | — | 0.40 (0.06–2.73) |
| Obsessive compulsive personality disorder | | | | |
| <i>n</i> (%) | 1108 (5.9) | 111 (9.3) | — | — |
| aOR-1 (99.9% CI) | 1.00 | 1.63 (1.00–2.66)*** | — | — |
| aOR-2 (99.9% CI) | 1.00 | 1.60 (0.98–2.61)** | — | 1.80 (0.82–3.92) |
| Any cluster C personality disorder ^a | | | | |
| <i>n</i> (%) | 1280 (6.7) | 120 (9.9) | — | — |
| aOR-1 (99.9% CI) | 1.00 | 1.54 (0.96–2.47)** | — | — |
| aOR-2 (99.9% CI) | 1.00 | 1.51 (0.94–2.42)** | — | 1.61 (0.75–3.45) |

All *n* values were unweighted, and all percentages were weighted. aOR-1, adjusted for gender, age, marital status, race/ethnicity, education, and household income; aOR-2, adjusted for age, marital status, race/ethnicity, education, household income, and any family history of dysfunction.

^a Dependent personality disorder was included in the any cluster C personality disorder summary variable. However, it was not analyzed in relation to physical punishment individually due to a cell size <5.

** *P* ≤ .01;

*** *P* ≤ .001.

discourage the use of physical punishment.⁵⁸ A more explicit position statement to be considered in the future might include the statement

that physical punishment (ie, spanking, smacking, slapping) should not be used with children of any age. In making such a recommendation, it will be important

to provide information about alternative discipline strategies, such as positive reinforcement. Many positive approaches to parenting and discipline

exist and have been reviewed in the literature.^{59–61}

From a public health perspective, reducing physical punishment may help to decrease the prevalence of mental disorders in the general population.

Policies need to be focused on strategies to reduce physical punishment, which again points to the importance of positive parenting approaches. Although this study has limitations, it provided a unique opportunity to examine harsh physical

punishment and mental health by using a nationally representative sample. These findings are important in considering policy and programmatic approaches to protect children from inappropriate and potentially harmful discipline.

REFERENCES

1. Global initiative to end all corporal punishment of children. Available at: <http://www.endcorporalpunishment.org/pages/frame.html>. Accessed March 17, 2012
2. Straus MA, Kantor GK. Corporal punishment of adolescents by parents: a risk factor in the epidemiology of depression, suicide, alcohol abuse, child abuse, and wife beating. *Adolescence*. 1994;29(115):543–561
3. Straus MA, Stewart JH. Corporal punishment by American parents: national data on prevalence, chronicity, severity, and duration, in relation to child and family characteristics. *Clin Child Fam Psychol Rev*. 1999;2(2):55–70
4. Zolotor AJ, Theodore AD, Chang JJ, Berkoff MC, Runyan DK. Speak softly—and forget the stick. Corporal punishment and child physical abuse. *Am J Prev Med*. 2008;35(4):364–369
5. Afifi TO, Brownridge DA, Cox BJ, Sareen J. Physical punishment, childhood abuse and psychiatric disorders. *Child Abuse Negl*. 2006;30(10):1093–1103
6. Afifi TO, Enns MW, Cox BJ, de Graaf R, ten Have M, Sareen J. Child abuse and health-related quality of life in adulthood. *J Nerv Ment Dis*. 2007;195(10):797–804
7. Afifi TO, Enns MW, Cox BJ, Asmundson GJ, Stein MB, Sareen J. Population attributable fractions of psychiatric disorders and suicidal ideation and attempts associated with adverse childhood experiences. *Am J Public Health*. 2008;98(5):946–952
8. Afifi TO, Boman J, Fleisher W, Sareen J. The relationship between child abuse, parental divorce, and lifetime mental disorders and suicidality in a nationally representative adult sample. *Child Abuse Negl*. 2009;33(3):139–147
9. Afifi TO, Brownridge DA, MacMillan H, Sareen J. The relationship of gambling to intimate partner violence and child maltreatment in a nationally representative sample. *J Psychiatr Res*. 2010;44(5):331–337
10. Afifi TO, Mather A, Boman J, et al. Childhood adversity and personality disorders: results from a nationally representative population-based study. *J Psychiatr Res*. 2011;45(6):814–822
11. Enns MW, Cox BJ, Afifi TO, De Graaf R, Ten Have M, Sareen J. Childhood adversities and risk for suicidal ideation and attempts: a longitudinal population-based study. *Psychol Med*. 2006;36(12):1769–1778
12. Fergusson DM, Boden JM, Horwood LJ. Exposure to childhood sexual and physical abuse and adjustment in early adulthood. *Child Abuse Negl*. 2008;32(6):607–619
13. Kessler RC, Davis CG, Kendler KS. Childhood adversity and adult psychiatric disorder in the US National Comorbidity Survey. *Psychol Med*. 1997;27(5):1101–1119
14. MacMillan HL, Fleming JE, Streiner DL, et al. Childhood abuse and lifetime psychopathology in a community sample. *Am J Psychiatry*. 2001;158(11):1878–1883
15. Molnar BE, Buka SL, Kessler RC. Child sexual abuse and subsequent psychopathology: results from the National Comorbidity Survey. *Am J Public Health*. 2001;91(5):753–760
16. Sareen J, Fleisher W, Cox BJ, Hassard S, Stein MB. Childhood adversity and perceived need for mental health care: findings from a Canadian community sample. *J Nerv Ment Dis*. 2005;193(6):396–404
17. Scott KM, Smith DR, Ellis PM. Prospectively ascertained child maltreatment and its association with DSM-IV mental disorders in young adults. *Arch Gen Psychiatry*. 2010;67(7):712–719
18. Garner AS, Shonkoff JP; Committee on Psychosocial Aspects of Child and Family Health; Committee on Early Childhood, Adoption, and Dependent Care; Section on Developmental and Behavioral Pediatrics. Early childhood adversity, toxic stress, and the role of the pediatrician: translating developmental science into lifelong health. *Pediatrics*. 2012;129(1). Available at: www.pediatrics.org/cgi/content/full/129/1/e224
19. MacMillan HL, Boyle MH, Wong MY, Duku EK, Fleming JE, Walsh CA. Slapping and spanking in childhood and its association with lifetime prevalence of psychiatric disorders in a general population sample. *CMAJ*. 1999;161(7):805–809
20. Durrant J, Ensom R. Physical punishment of children: lessons from 20 years of research [published online ahead of print February 6, 2012]. *CMAJ*. doi:10.1503/cmaj.101314
21. Gunnar MR, Fisher PA, Early Experience, Stress, and Prevention Network. Bringing basic research on early experience and stress neurobiology to bear on preventive interventions for neglected and maltreated children. *Dev Psychopathol*. 2006;18(3):651–677
22. Caspi A, McClay J, Moffitt TE, et al. Role of genotype in the cycle of violence in maltreated children. *Science*. 2002;297(5582):851–854
23. Jaffee SR, Caspi A, Moffitt TE, et al. Nature X nurture: genetic vulnerabilities interact with physical maltreatment to promote conduct problems. *Dev Psychopathol*. 2005;17(1):67–84
24. Jaffee SR, Caspi A, Moffitt TE, Polo-Tomas M, Price TS, Taylor A. The limits of child effects: evidence for genetically mediated child effects on corporal punishment but not on physical maltreatment. *Dev Psychol*. 2004;40(6):1047–1058
25. Gershoff ET. Corporal punishment by parents and associated child behaviors and experiences: a meta-analytic and theoretical review. *Psychol Bull*. 2002;128(4):539–579
26. Knox M. On hitting children: a review of corporal punishment in the United States. *J Pediatr Health Care*. 2010;24(2):103–107
27. Bender HL, Allen JP, McElhaney KB, et al. Use of harsh physical discipline and developmental outcomes in adolescence. *Dev Psychopathol*. 2007;19(1):227–242
28. Berlin LJ, Ispa JM, Fine MA, et al. Correlates and consequences of spanking and verbal punishment for low-income white, African American, and Mexican American toddlers. *Child Dev*. 2009;80(5):1403–1420
29. Bradley RH, Conynv RF, Burchinal M, McAdoo HP, Coll CG. The home environments of children in the United States part II: relations

- with behavioral development through age thirteen. *Child Dev.* 2001;72(6):1868–1886
30. Slade EP, Wissow LS. Spanking in early childhood and later behavior problems: a prospective study of infants and young toddlers. *Pediatrics.* 2004;113(5):1321–1330
 31. Strassberg Z, Dodge KA, Pettit GS, Bates JE. Spanking in the home and children's subsequent aggression toward kindergarten peers. *Dev Psychopathol.* 1994;6(3):445–461
 32. Straus MA, Sugarman DB, Giles-Sims J. Spanking by parents and subsequent antisocial behavior of children. *Arch Pediatr Adolesc Med.* 1997;151(8):761–767
 33. Taylor CA, Manganello JA, Lee SJ, Rice JC. Mothers' spanking of 3-year-old children and subsequent risk of children's aggressive behavior. *Pediatrics.* 2010;125(5). Available at: www.pediatrics.org/cgi/content/full/125/5/e1057
 34. Leary CE, Kelley ML, Morrow J, Mikulka PJ. Parental use of physical punishment as related to family environment, psychological well-being, and personality in undergraduates. *J Fam Violence.* 2008;23:1–7
 35. Mulvaney MK, Mebert CJ. Stress appraisal and attitudes towards corporal punishment as intervening processes between corporal punishment and subsequent mental health. *J Fam Violence.* 2010;25:401–412
 36. Turner HA, Muller PA. Long-term effects of child corporal punishment on depressive symptoms in young adults: Potential moderators and mediators. *J Fam Issues.* 2004;25:761–782
 37. Larzelere RE. A review of the outcomes of parental use of nonabusive or customary physical punishment. *Pediatrics.* 1996;98(4 pt 2):824–828
 38. Baumrind D, Larzelere RE, Cowan PA. Ordinary physical punishment: is it harmful? Comment on Gershoff (2002). *Psychol Bull.* 2002;128(4):580–589, discussion 602–611
 39. Larzelere RE, Cox RB Jr, Smith GL. Do non-physical punishments reduce antisocial behavior more than spanking? A comparison using the strongest previous causal evidence against spanking. *BMC Pediatr.* 2010;10:10
 40. Regalado M, Sareen H, Inkelas M, Wissow LS, Halfon N. Parents' discipline of young children: results from the National Survey of Early Childhood Health. *Pediatrics.* 2004;113(suppl 6):1952–1958
 41. Dean K, Stevens H, Mortensen PB, Murray RM, Walsh E, Pedersen CB. Full spectrum of psychiatric outcomes among offspring with parental history of mental disorder. *Arch Gen Psychiatry.* 2010;67(8):822–829
 42. Grant BF, Hasin DS, Stinson FS, et al. Prevalence, correlates, co-morbidity, and comparative disability of DSM-IV generalized anxiety disorder in the USA: results from the National Epidemiologic Survey on Alcohol and Related Conditions. *Psychol Med.* 2005;35(12):1747–1759
 43. Dong M, Anda RF, Dube SR, Giles WH, Felitti VJ. The relationship of exposure to childhood sexual abuse to other forms of abuse, neglect, and household dysfunction during childhood. *Child Abuse Negl.* 2003;27(6):625–639
 44. Dube SR, Felitti VJ, Dong M, Chapman DP, Giles WH, Anda RF. Childhood abuse, neglect, and household dysfunction and the risk of illicit drug use: the adverse childhood experiences study. *Pediatrics.* 2003;111(3):564–572
 45. Straus MA. Measuring intrafamily conflict and violence: the Conflict Tactics (CT) Scales. *J Marriage Fam.* 1979;41(1):75–88
 46. Straus MA, Hamby SL, Boney-McCoy S, Sugarman DB. The revised Conflict Tactics Scales (CTS2): development and preliminary psychometric data. *J Fam Issues.* 1996;17:283–316
 47. Bernstein DP, Fink L, Handelsman L, et al. Initial reliability and validity of a new retrospective measure of child abuse and neglect. *Am J Psychiatry.* 1994;151(8):1132–1136
 48. Grant BF, Dawson DA, Hasin DS. *The Alcohol Use Disorder and Associated Disabilities Interview Schedule—DSM-IV Version.* Bethesda, MD: National Institute on Alcohol Abuse and Alcoholism; 2001
 49. Ruan WJ, Goldstein RB, Chou SP, et al. The alcohol use disorder and associated disabilities interview schedule-IV (AUDADIS-IV): reliability of new psychiatric diagnostic modules and risk factors in a general population sample. *Drug Alcohol Depend.* 2008;92(1–3):27–36
 50. Grant BF, Dawson DA, Stinson FS, Chou SP, Kay W, Pickering RP. The Alcohol Use Disorder and Associated Disabilities Interview Schedule-IV (AUDADIS-IV): reliability of alcohol consumption, tobacco use, family history of depression and psychiatric diagnostic modules in a general population sample. *Drug Alcohol Depend.* 2003;71(1):7–16
 51. Grant BF, Stinson FS, Dawson DA, Chou SP, Ruan WJ, Pickering RP. Co-occurrence of 12-month alcohol and drug use disorders and personality disorders in the United States. *Arch Gen Psychiatry.* 2004;61(4):361–368
 52. American Psychiatric Association. *Diagnostic Criteria From DSM-IV-TR.* Washington, DC: American Psychiatric Association; 2000
 53. Shah BV, Barnwell BG, Bieler GS. *SUDAAN User's Manual: Release 9.0.* Triangle Park, NC: Research Triangle Institute; 2004
 54. Last JM. *A Dictionary of Epidemiology.* 4th ed. New York, NY: Oxford University Press; 2001
 55. Hardt J, Rutter M. Validity of adult retrospective reports of adverse childhood experiences: review of the evidence. *J Child Psychol Psychiatry.* 2004;45(2):260–273
 56. Brewin CR, Andrews B, Gotlib IH. Psychopathology and early experience: a reappraisal of retrospective reports. *Psychol Bull.* 1993;113(1):82–98
 57. Shelov SP, Altman TR, eds. *Caring for Your Baby and Young Child.* Elk Grove Village, IL: American Academy of Pediatrics; 2009
 58. Effective discipline for children. *Paediatr Child Health.* 2004;9(1):37–50
 59. Bauer NS, Webster-Stratton C. Prevention of behavioral disorders in primary care. *Curr Opin Pediatr.* 2006;18(6):654–660
 60. Kane GA, Wood VA, Barlow J. Parenting programmes: a systematic review and synthesis of qualitative research. *Child Care Health Dev.* 2007;33(6):784–793
 61. Sandler IN, Schoenfelder EN, Wolchik SA, MacKinnon DP. Long-term impact of prevention programs to promote effective parenting: lasting effects but uncertain processes. *Annu Rev Psychol.* 2011;62:299–329

Physical Punishment and Mental Disorders: Results From a Nationally Representative US Sample

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Pediatrics; originally published online July 2, 2012;
DOI: 10.1542/peds.2011-2947

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