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Corporal Punishment in Adolescence and Physical Assaults on Spouses in Later Life: What Accounts for the Link?

There is considerable evidence that corporal punishment is associated with the subsequent aggression of children, and there is recent evidence that later in life this aggression includes physical assaults on spouses. Yet there has been no direct test of either modeling of cultural norms or other processes that could account for the link between corporal punishment and partner violence. Using data on 4,401 couples who participated in the National Family Violence Survey, this article reports such a test. The theoretical model specified three processes: social learning, depression, and truncated development of nonviolent conflict-resolution skills. Logistic regression was used to estimate separate models for men and women. The findings are consistent with the theoretical model. Because corporal punishment of adolescents occurs in over half of U.S. families, the findings suggest that elimination of this practice can reduce some of the psychological and social processes that increase the likelihood of future marital violence and perhaps other violence as well.

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Studies of family violence have found considerable evidence that the experience of frequent corporal punishment as an adolescent is related to an increased rate of assaulting a spouse later in life. Gelles (1974) studied 80 families and found that spouses who had experienced corporal punishment frequently (monthly to daily) had a higher rate of assaulting a partner than those who had not been hit. Carroll (1977) studied 96 couples and found that "36.6% of those who had experienced a high degree of parental punishment reported assaulting a spouse compared to 14.5% of those who had not" (p. 176). Other researchers report similar results. Johnson's (1984) study of 61 abusive men and 44 nonabusive men found that the experience of corporal punishment is significantly related to both minor and severe spouse abuse. Straus' analysis of a nationally representative sample of 2,143 American couples (1990) found that the more corporal punishment these husbands and wives had experienced early in life, the higher the probability of assaulting their spouses. Kalmuss' reanalysis of the same sample (1984), using more adequate statistical methods, showed that experiencing corporal punishment as a teenager more than doubled the probability of husband-to-wife and wife-to-husband assaults. Straus and Kaufman Kantor (1994) studied a second nationally representative sample ($N = 2,149$) and found that corporal pun-

ishment was a significant risk factor for assaults on wives, even when other potentially influential variables, such as socioeconomic status, gender, age, witnessing violence between parents, and alcohol use, were controlled.

The findings on physical assaults against a spouse are consistent with many studies of physical aggression by children against other children. These studies found that the more corporal punishment children experienced, the greater their physical aggressiveness against other children (Kandel, 1992). One of the most recent studies used a longitudinal design that controlled for the child's antisocial behavior at Time 1 and also for other parental behaviors, such as parental support (Straus, Sugarman, & Giles-Sims, 1995). The results show that use of corporal punishment at Time 1 produced an increase in antisocial behavior 2 years later. Parallel results were found for children 3–5 years old, 6–9 years old, and 10 years old or older.

CORPORAL PUNISHMENT IN AMERICAN FAMILIES

Despite considerable evidence showing a link between corporal punishment and physically aggressive behavior, corporal punishment has not received much attention in the family violence literature. Part of the reason for the inattention might be that corporal punishment is so widely used and the idea that corporal punishment is sometimes necessary and harmless is so embedded in American culture that researchers tend not to regard it as an important issue. This section, therefore, reviews findings on the prevalence of and the cultural norms surrounding corporal punishment.

Prevalence of Corporal Punishment

Corporal punishment—the use of physical force with the intention of causing pain but not injury for purposes of correction or control—is legal in every state of the United States. Over 90% of parents actually do use corporal punishment on toddlers (Straus, 1991; Straus, 1994a). Moreover, parents who use corporal punishment tend to do so very frequently. In fact, 7.5% of the mothers of 3- to 5-year-old children interviewed for the National Longitudinal Study of Youth hit the child during the interview (Giles-Sims, Straus, & Sugarman, 1995). Just over half of American parents continue corporal punishment into their children's adolescence, and they hit them an average of eight times in the previous 12 months (Straus & Donnelly, 1993). The high prevalence and

chronicity of corporal punishment of adolescents is important for the research presented here because corporal punishment at that age is the main independent variable.

Cultural Norms That Support Corporal Punishment

Consistent with the high prevalence rates, corporal punishment is widely believed to be a necessary form of discipline. Although approval rates have been decreasing, as recently as 1968, 94% of a national sample agreed that “a good hard spanking is sometimes necessary” (Straus & Mathur, 1994). The belief in the necessity of corporal punishment is so strong that parents who make it known that they would *never* spank tend to be perceived as ineffective, and their children tend to be viewed as poorly behaved, even though they are as well-behaved or better behaved than children whose parents spank (Carson, 1986).

Among social scientists, with the exception of those who study the physical aggressiveness of children, little attention has been paid to possible harmful side effects of corporal punishment. Straus (1994a) examined 10 widely used textbooks in child development and found that eight of the 10 did not have an entry in the index or table of contents for “corporal punishment,” “spanking,” “discipline,” or “physical punishment.” A page-by-page content analysis located material on corporal punishment in nine of the books, but the space on that topic ranged from one sentence to a maximum of only four pages. This is remarkably little attention paid to a mode of socialization experienced by over 90% of toddlers and that continues for 13 or 14 years for just over half of American children.

The minuscule space devoted to corporal punishment in child development textbooks is also remarkable because evidence of possible harmful side effects has been available at least since the landmark study of Sears, Maccoby, and Levin (1957), which first reported that corporal punishment of preschool-age children is associated with aggression toward other children and a less well-developed conscience. Many studies since then have found that corporal punishment is associated with physical aggression by children. A number of studies also have found a link between corporal punishment and physical abuse (reviewed in Straus & Yodanis, 1994). The study by Kadushin and Martin (1981) shows that most cases of physical abuse are the end point of a continuum that began with corporal punishment and got out of hand. De-

spite this, a review of over 120 books on child abuse found that fewer than half ever mention the possibility that corporal punishment increases the risk of physical abuse (Straus & Yodanis, 1994).

The virtual silence on corporal punishment also applies to books for parents. It is often assumed that Benjamin Spock, the author of one of the most widely read books on baby and child care in the U.S., advises parents not to spank. In fact, the most recent revision of *Baby and Child Care* (Spock & Rothenberg, 1992), like previous editions, tells parents to "try" to avoid corporal punishment, rather than stating unambiguously that a child should never be spanked. Carson (1986) examined 31 of the most widely sold advice books for parents. She found that 35% said nothing at all about corporal punishment, 30% encouraged parents to use corporal punishment, and only 35% discouraged using corporal punishment. None unequivocally advised parents to never spank. If Carson's study were repeated today, there would be at least one widely sold book that does advocate not spanking (Leach, 1991), and recent trends (Straus, 1994a, Chapter 11; Straus & Mathur, 1994) suggest that in the future more parent advice books are likely to advise never using corporal punishment.

THE LINK BETWEEN CORPORAL PUNISHMENT AND SPOUSAL ASSAULT

Although several studies of the relationship between corporal punishment and physically assaulting a spouse were reviewed in the introduction, none of these studies investigated processes that might have produced this relationship. Several processes are probably involved. This article tests theoretical models that incorporate three processes: learning implicit cultural norms justifying violence, truncated development of nonviolent conflict-resolution skills manifested in a high level of conflict, and depression-based aggression.

Learning the Cultural Norms of Violence

Although physically assaulting a spouse is a criminal act, American culture legitimizes such acts in various ways. National surveys show that at least a quarter of the population approves of slapping a spouse under some circumstances (Gelles & Straus, 1988; Greenblat, 1983; Stark & McEvoy, 1970; Straus, Gelles, & Steinmetz, 1980; Straus, Kaufman Kantor, & Moore, 1994). Moreover, we think that a much larger percentage of the popula-

tion actually holds such beliefs than is willing to express approval in response to survey questions.

These attitudes reflect a carry-over from an era when husbands did have the legal right to "physically chastise" an "errant" wife (Calvert, 1974). The courts began nullifying this common law principle in the 1870s, but it has survived in American culture and in the culture of the criminal justice system. To take just one of thousands of examples, a New Hampshire judge, in accepting a plea bargain from a man who stabbed his wife, admonished him by saying that he should have slapped her instead ("Darts and Laurels," 1993).

More than 20 years ago, Straus (1976) documented the multitude of ways in which the actions and inactions of the criminal justice system continued to legitimize spousal assault. There has been remarkable progress since then, largely due to the efforts of the women's movement. Instead of advising police officers to avoid interfering in "domestic disturbances," most police departments now require or recommend arrest (Sherman & Cohn, 1989). Nevertheless, recent studies document the continued inattention of the criminal justice system to domestic assaults (Ferraro, 1989; Jones, 1994; Kaufman Kantor & Straus, 1990; Waaland & Keeley, 1985). The reasons for the persistence of norms legitimizing marital violence are multiple and complex. We examine the hypothesis that one reason is found in the prevalence of corporal punishment by parents. This teaches children that hitting is a morally correct way of dealing with misbehavior.

Social learning theory suggests that children learn to use and value violence by observing and modeling the behavior of their parents (Bandura, 1973). We think this is especially likely to happen if the violence observed is in the form of corporal punishment of children because corporal punishment is a legal and socially approved behavior. Thus, when parents use corporal punishment to correct and teach, it is accompanied by a hidden curriculum. Two of the hidden lessons are ". . . that violence can be and should be used to secure good ends—the moral rightness of violence. . . [and] the idea that violence is permissible when other things don't work" (Straus et al., 1980, 103–104).

Thus, one component of our model, the normative approval of violence, is based on the assumption that corporal punishment teaches children that when someone misbehaves and won't listen to reason, it is appropriate to hit them. Par-

ents think that this applies only to *their* hitting a child who misbehaves. However, studies of children show that children who are spanked tend to apply that principle to other children who misbehave, as they see it. Our study builds on that research by investigating the possibility that the lessons learned may persist into adulthood and marital relationships because it is almost inevitable that, sooner or later, a spouse will "misbehave" and not "listen to reason," as the partner sees it. We theorize that when this occurs, husbands and wives who have been hit as adolescents for misbehavior are more likely as adults to hit a spouse who misbehaves.

Truncated Development of Conflict-Resolution Skills

The second part of the models we estimated starts from the assumption that the more parents rely on corporal punishment to deal with misbehavior, the less opportunity the child has to observe, participate in, and learn nonviolent modes of influencing the behavior of another person or modifying their own behavior to adapt to the situation. To the extent that this assumption is correct, persons whose parents frequently used corporal punishment will, as adults, have less skill in managing conflict and, therefore, have more unresolved conflicts with their spouses. A high level of conflict, in turn, increases the risk of violence (Straus et al., 1980, Chart 13). The probability of using physical force is increased further because such persons are also more likely to believe that hitting a spouse is sometimes appropriate. The data available for this research made it possible to test this hypothesis indirectly because they included a measure of the presumed consequence of lack of such skills: a measure of unresolved marital conflict.

Depression

The third component of the models we tested identifies depression as an intervening variable. The inclusion of depression is based on two related lines of research. The first links corporal punishment with depression as an adult. Straus (1994b) and Straus and Kaufman Kantor (1994) found that, after statistically controlling for six risk factors (e.g., witnessing parents assault each other as a teen, socioeconomic status), frequent corporal punishment during adolescence was associated with a two-fold increase in the preva-

lence of severe depressive symptoms and suicidal ideation among adult women and men.

A second relevant line of research links depression with hostile and aggressive behavior toward others. Although depressed individuals are typically thought of as passive and motivationally deficient, a growing body of research suggests that depression often may be associated with aggression, especially in the form of uncontrolled violent outbursts against others (Berkowitz, 1993). The concomitance of depression and aggression, apparent among children (Garber, Quiggle, Panak, & Dodge, 1991) as well as adults, led Berkowitz (1983, 1993) to speculate that depressive symptomatology represents one of several types of aversive stimuli that instigate hostility or violence. Research by Maiuro, Cahn, Vitaliano, Wagner, and Zegree (1988), Julian and McKenry (1993), and Tolman and Bennett (1990) found that this includes aggression directed at spouses.

Studies focusing specifically on domestic violence also have observed elevated levels of depressive symptomatology among individuals who physically assault their spouses. For example, Julian and McKenry (1993) reported that more than twice as many domestically violent males (45%) scored in the clinically depressed range on a self-report measure of depressive symptomatology than nonviolent males (20%) did and that depressive symptoms discriminated between violent and nonviolent men after controlling for race, quality of marital relationship, life stress, and alcohol use. Maiuro et al. (1988) found that rates of clinical depression were higher among men who assaulted their wives (67%) than among men who were assaultive toward nonfamily members (34%), and nonassaultive men (4%).

The link between depression and spouse assault has not yet been adequately explained and most likely represents a complex, reciprocal relationship. However, several researchers (Maiuro et al., 1988; Tolman & Bennett, 1990) have suggested that physical violence may reflect a maladaptive strategy to deal with feelings of helplessness that accompany depression. An individual may act aggressively against his or her spouse in an effort to reestablish control over a discordant marital relationship that is in jeopardy of dissolving. Enduring patterns of low self-esteem and personal insecurity or fears of abandonment may predispose certain individuals to respond to perceived threats of loss with aggression.

Our research builds on these observations by examining the degree to which depressive symp-

tomatology mediates the relationship between adolescent corporal punishment and marital violence in adulthood. Postulating that depression serves as a precursor to spousal aggression in no way contradicts our earlier findings that we interpreted as showing that depression is a consequence of marital violence (Stets & Straus, 1990). We believe that both processes are likely to occur. Because corporal punishment in adolescence has been shown to be associated with an increased probability of depression as an adult (Straus, 1994a; Straus, 1994b), we reason that at least part of the cause of depression is not traceable to being physically assaulted by a spouse. This assumption permits us to include depression as an intervening variable in the model we test.

Interrelationships of Mediating Variables

Up to this point, the discussion of the theory to be tested has treated each of the three components separately. One can think of conflict-resolution skills, approval of violence, and depression as alternative explanations for the link between corporal punishment as an adolescent and marital violence. From that perspective, the study can be viewed as a test of competing theories. Our perspective, however, is that the three hypothesized intervening processes are linked and complementary and mutually reinforcing. Our perspective is based on research showing that marital conflict and depression are linked (Julian & McKenry, 1993; Maiuro et al., 1988; Beach, Sandeen, & O'Leary, 1990). As for links with norms that approve of violence, although we have not found previous research showing a connection between approval of violence and marital conflict and depression, we think that such a connection is plausible as the cognitive manifestation of the already demonstrated link between marital conflict and depression. The data for this study permitted an empirical examination of that issue by regressing each of the three mediating variables on the other two, while controlling for the seven exogenous variables.

Logistic regression analyses (that included controls for the exogenous variables described below) revealed a very strong relationship between depression and marital conflict among both male and female respondents (odds ratio for women = 3.42, $p < .001$; for men odds ratio = 2.52, $p < .001$). As for the other two hypothesized links, we found a significant relationship between depression and approval of violence, but only for

women respondents (odds ratio = 1.67, $p < .01$), and a significant relationship between approval of violence and marital conflict, but only for male respondents (odds ratio = 2.52, $p < .001$). The difference between the findings for men and women might reflect gender differences in socialization and conflict management and, specifically, the tendency for men to externalize problems in the form of aggression and for women to internalize problems in the form of depression.

METHOD

Models Tested

We used logistic regression to test the theoretical model. We estimated separate models for men and for women in order to allow for the possibility that the effects of corporal punishment might be different for men and women and because it is widely believed that assaults on spouses by women have a different etiology than assaults on spouses by men (Cascardi & Vivian, 1995; Nazroo, 1995; Straus, 1993). The model for male respondents used the occurrence of an assault by the husband on the wife as the dependent variable. The model for female respondents used the occurrence of an assault by the wife on the husband as the dependent variable. Both models specify that corporal punishment experienced as an adolescent increases the probability of approving hitting a partner, conflict between spouses, and depression and that each of these three intervening variables increases the probability of physically assaulting a spouse. In addition to corporal punishment, five other exogenous variables were included to control for possible confounds with corporal punishment (see Table 1). We used logistic regression (logit) because our interest was in whether or not there had been an assault in the previous 12 months, and logit is designed for estimating models in which the dependent variable is a nominal variable (Aldrich & Nelson, 1984; Hamilton, 1992). All seven exogenous variables and the three intervening variables first were regressed on the partner assault measure. Then each intervening variable was regressed on the five exogenous variables. The results, in the form of the significant odds ratios, were displayed in the form of a modified path model (Hagenaars, 1993, p. 15) in order to facilitate examining and interpreting the findings. However, as Hagenaars notes, "there are no rules for decomposing the total effect in terms of direct and indirect effects" (p. 17).

Sample

The data for this study are from the 1985 National Family Violence Survey (described in detail in Straus & Gelles, 1990). This is a nationally representative sample of American couples selected by multistage, stratified, random-digit dialing. To be included in the survey, a respondent had to be 18 years old or older and fall into one of the following categories: (a) presently living together as a male-female couple with or without children, or (b) a single parent living with a child under the age of 18, or (c) divorced or separated within the previous 2 years. A random process was used to select either the male or female partner for the approximately 35-minute telephone interview. For brevity of exposition, we will use terms such as "assault a spouse" and "marital conflict," even though not all of the couples were married. The response rate for this survey was 84%. The logistic regression program used for this study (STATA 3.0) uses listwise deletion for missing data. This resulted in a sample of 4,401 (2,557 women and 1,844 men), considerably fewer than the 6,002 cases in the full sample. Lost were primarily respondents who did not answer one of the conflict or violence questions. We, therefore, investigated whether the reduced sample differed from the full sample in respect to the 11 variables used in the regression analysis. Comparison of the listwise and full columns of Table 1 shows only a small difference.

Measures of Spousal Assault

Physical assaults by husbands on wives and by wives on husbands were measured using the violence scale of the Conflict Tactics Scales (Straus

1979, 1990; Straus, Hamby, Boney-McCoy, & Sugarman, 1996). The violence items ask if any of the following acts were used in anger in the last 12 months: "threw something at the partner; pushed, grabbed, or shoved; slapped; kicked, bit, or hit with fist; hit or tried to hit with something; choked; beat up; threatened with a knife or gun; used a knife or gun."

Husband-to-wife assault was scored as present if the husband carried out one or more of these nine acts in the previous 12 months, and wife-to-husband assault was scored if the wife carried out any of these acts during that time. Table 1 shows that 12% of the men and 13% of the women assaulted their partner in the previous 12 months.

Numerous psychometric assessments have been conducted on the CTS to evaluate its reliability and validity as an instrument for measuring spousal violence (see Straus, 1990, for a review of these studies). Internal consistency coefficients (alpha) range from .69 to .88 for the husband-to-wife assault scale and from .79 to .82 for the wife-to-husband assault scale. In addition, evidence from both treatment and community samples shows that interspousal agreement in CTS scores falls within the moderate to high range. For example, Babcock, Waltz, Jackson, and Gottman (1993) and Browning and Dutton (1986) reported significant interspousal correlations on the husband-to-wife assault scale ($r_s = .42$ and $.65$, respectively). In addition, Cantos, Neidig, and O'Leary (1993) found strong and significant correlations between couples on both the husband-to-wife and wife-to-husband assault scales ($r_s = .90$ and $.84$, respectively). Moreover, the interspousal correlations remained significant ($r_s = .51$ for both scales) when only those couples reporting violence were included in the analyses.

TABLE 1. DESCRIPTIVE STATISTICS FOR KEY VARIABLES

Variable	Men		Women	
	Listwise	Full	Listwise	Full
<i>n</i>	1,844	2,337	2,557	3,665
Corporal punishment by mother as a teen (%)	44.2	43.8	35.1	36.2
Corporal punishment by father as a teen (%)	44.1	43.9	25.7	26.1
Approved slapping a spouse in some situations (%)	28.1	28.0	17.7	18.0
Assaulted spouse in past year (%)	12.2	11.6	13.2	13.2
Witnessed violence between parents as a teen (%)	12.9	12.7	12.7	13.9
Depressive Symptoms Index (% high)	6.6	7.2	10.9	12.9
Marital Conflict Index (% high)	8.4	8.7	9.9	10.6
Age of respondent (mean)	42	42.6	41	40.7
Mean number of children at home	1	1	1	1
Mean Socioeconomic Status Index score	50	49.6	48	48
Percent minority	26.1	27.8	28.0	33.8

Somewhat lower levels of agreement were obtained in Szinovacz's (1983) analysis of CTS data from a community sample of couples. Couples agreed on only 40% of their responses to the wife-to-husband assault index and on 27% of their responses to the husband-to-wife assault scale. These discrepancies did not, however, alter substantive relationships between violence and various risk factors. For example, violence was associated with low income and education, regardless of whether the data were based on husband or wife reports (Szinovacz, 1983).

Independent Variables

Corporal punishment. Respondents were asked, "Thinking about when you, yourself, were a teenager, about how often would you say your mother or stepmother used physical punishment like slapping or hitting you? Think about the year in which this happened the most." The response categories were never, once, twice, 3-5 times, 6-10 times, 11-20 times, more than 20 times. We asked a parallel question about corporal punishment by the respondent's father.

Empirical research and socialization theories of parent-child relationships have noted that mothers and fathers spend unequal time, perform unique parenting roles, have different interactions, and form dissimilar relationships with their children (Demom, 1992; Peterson & Rollins, 1987). Parental use of corporal punishment is no exception (Straus, 1994). Given the distinct roles of men and women in childrearing, it is important to examine the father's and the mother's use of corporal punishment separately. As we will discuss later, our research confirms that there are *gender differences in the consequences of using corporal punishment*.

The questions on corporal punishment focused on adolescence for two reasons. First, we believed that the data based on asking adults about corporal punishment at earlier ages (preadolescence) would be less accurate. Second, based on theoretical grounds presented elsewhere (Straus & Donnelly, 1993), we believed that corporal punishment during adolescence is likely to have the most serious side effects.

Use of recall data probably results in an underestimation of both prevalence and chronicity. Nevertheless, the rates in Table 1 are remarkably high. The first two rows of Table 1 show the percentage of men and women who were hit by their father and by their mother during their teen years. If hitting by the father and the mother are com-

bined, the percentages increase to 58% of men and 44% of women. Furthermore, when parents hit teenagers, it typically is not an isolated event. Among the half of the population that was hit in adolescence, the mean number of times they experienced corporal punishment in the previous 12 months was 7.9, and the median, 4.

A limitation of this measure is that respondents whose parents discontinued corporal punishment by the teen years had to be coded as experiencing no corporal punishment, whereas the 90% prevalence rate among toddlers cited earlier makes it likely that almost all respondents had been hit by their parents at younger ages. Thus, the "none" category means none as a teenager, rather than no corporal punishment at all, and could be a source of Type II error. Despite this and other limitations, the rates estimated by this method correspond to corporal punishment rates from two studies using contemporaneous data obtained by interviewing parents of teenage children. (For further information, see Straus, 1990; Straus & Donnelly, 1993; Wauchope & Straus, 1990.)

It is important to keep in mind that the data refer to corporal punishment in adolescence and that the findings, therefore, refer to corporal punishment at that age. Although this limits the applicability of the findings to the half of American adults who were hit by their parents when they were in their teens, that is obviously a large sector of the U.S. population.

Approval of marital violence. This variable was measured using two questions from the survey conducted for the National Commission on the Causes and Prevention of Violence (as given in Owens & Straus, 1975). Respondents were asked, "Are there situations that you can imagine in which you would approve of a husband slapping a wife's face?" Respondents who answered yes were coded 1. The question was replicated for a wife slapping her husband's face (see Table 1).

Depression. Identifying who is depressed in a large cross-sectional sample of Americans is a difficult and controversial task. The method used in the 1985 National Family Violence Survey is based on the Psychiatric Epidemiological Research Instrument or PERI (Dohrenwend et al., 1976). The PERI provides data on a number of different psychiatric problems and is too long to be included in the half-hour interviews that were conducted. The measure of depression used in this study consists of the following four PERI

items that Newman (1984) found most indicative of depression: "bothered by feelings of sadness or depression, felt very bad and worthless, had times when you couldn't help wondering if anything was worthwhile anymore, felt completely hopeless about everything."

Respondents were asked to indicate how often in the past year each of the above occurred using the following categories: never = 0, almost never = 1, sometimes = 2, fairly often = 3, very often = 4. These items were factor-analyzed using the SPSS Principle Components Program. The analysis found a single factor that accounted for 66% of the variance. The Depressive Symptoms Index used in this study is the factor-weighted sum of these four items and has an alpha coefficient of reliability of .82. For the logistic regressions to be reported, this variable was dichotomized at the 90th percentile. The 90th percentile was used because we wanted a measure that is analogous to the proportion of the population suffering from serious depression (Holden, 1991).

Marital conflict. The extent of unresolved conflict in the respondent's marriage was measured by questions about how often the respondent and the spouse or partner disagreed on five issues: managing the money; cooking, cleaning, or repairing the house; social activities and entertaining; affection and sexual relations; and issues about the children. The response categories were 0 = never, 1 = sometimes, 2 = usually, 3 = almost always, 4 = always. Because all areas of conflict, such as conflict over children, are not applicable to all couples, the index was computed by taking an average of the completed items. The index has an alpha coefficient of reliability of .87. It was dichotomized at the 90th percentile in order to identify couples with a high level of continuing unresolved conflict.

Exogenous Variables

Violence between respondent's parents. The extent of violence in the respondent's family of origin was measured by asking if and, if so, how often their father or stepfather hit or threw something at their mother during their teenage years. A parallel question was asked about the mother or stepmother. The response categories were the same as those for the CTS items.

Age. The age variable refers to the age of the partner who was interviewed.

Socioeconomic status. A socioeconomic index was computed by factoring the following five items using the SPSS/PC principle components analysis: education of the wife and the husband, their occupational prestige scores, and the combined income of the couple. This resulted in one factor that explained 56% of the variance in these three indicators and has an alpha reliability coefficient of .80.

Ethnic group. European Americans were coded 0 and African Americans, Hispanic Americans, or others were coded 1.

Number of children. This variable is the number of children younger than 18 years old who lived in the household with the respondent at the time of the interview.

FINDINGS

Corporal Punishment and Assaults on Partners

That corporal punishment is related to assaults on spouses is confirmed for this study by the odds ratios in the last column of the first two rows of parts A and B of Table 2. All are in the hypothesized direction, although one of the four is not statistically significant. The interpretation of these data can be illustrated by the odds ratio of 1.087 in the last column of the first row in part A of Table 2. An odds ratio is a ratio of the odds at two different values of x and often is used comparatively to describe the strength of an effect (Hamilton, 1992, p. 230). In this case it indicates that each increase of one category in the seven-category corporal punishment index increases the odds of a man physically assaulting his partner by 1.087 or 9%.

Corporal Punishment and the Intervening Variables

The relationship of corporal punishment to the first of the processes that might help explain the link between corporal punishment and assault of a partner (approval of a husband slapping his wife) is given in the first column of Table 2 and graphed in Figure 1 for male respondents. Figure 1 is a conditional effect plot (Hamilton, 1992, 1993) that controls for witnessing violence between parents. It shows that the more corporal punishment experienced as an adolescent, the greater the probability that a man will approve of slapping a wife's face and that this relationship applies both to men

TABLE 2. REGRESSION MODELS TESTING DIRECT AND INDIRECT PATHS

Independent Variable	Odds Ratios for			
	Approval of Violence	Depression	Marital Conflict	Spousal Assaults
Men				
Corporal punishment by mother	1.114***	1.089*	1.191***	1.087*
Corporal punishment by father	1.084**	1.062	.983	1.034
Husband-to-wife violence of parents	1.562***	1.446*	1.315	2.295***
Age of respondent	.985***	.993	.991*	.949***
Socioeconomic status	1.001	.982***	.982***	.993
Ethnic group	.948	1.092	1.417*	1.468**
Number of children	1.017	1.016	1.037	.973
Approval of violence	—	—	—	2.045***
Depression	—	—	—	2.935***
Marital conflict	—	—	—	2.641***
Model χ^2	75.13***	29.44***	48.20***	214.75***
Pseudo R^2	.03	.03	.04	.16
Women				
Corporal punishment by mother	1.126***	1.131***	1.106**	1.093*
Corporal punishment by father	1.031	1.097**	1.060	1.083*
Husband-to-wife violence of parents	1.558***	1.703***	1.559**	2.106***
Age of respondent	.987***	.999	.999	.936***
Socioeconomic status	.991**	.985***	.995*	1.004
Ethnic group	.893	1.350**	2.208***	1.435**
Number of children	.953	.982	.901*	.822***
Approval of violence	—	—	—	2.089***
Depression	—	—	—	2.066***
Marital conflict	—	—	—	3.427***
Model χ^2	78.07***	106.76***	71.42***	362.80***
Pseudo R^2	.03	.04	.04	.18

Note: See Hamilton, 1993, for an explanation of the pseudo R^2 . For men, $n = 1,844$. For women, $n = 2,557$. * $p \leq .05$. ** $p \leq .01$. *** $p \leq .001$. (one-tailed tests)

who witnessed violence between their parents (the upper line in the graph) and to those who did not (the lower line). Figure 1 was calculated by holding constant at the mean all other exogenous variables shown in Table 2. We found a similar function (not shown) with slightly lower intercepts for women when we plotted approval of a wife slapping her husband against the extent to which the women in this sample experienced corporal punishment by their mothers.

We also computed plots such as Figure 1 for the relation of corporal punishment to the other two intervening variables (depression and marital conflict), but those are not shown here. The odds ratios for these two variables are given in the second and third columns of Table 2. Column 2 shows that corporal punishment of an adolescent by mothers consistently is associated with an increased probability of both men and women being high in depression, and column 3 shows that corporal punishment is associated with an increased probability of high marital conflict. However, corporal punishment by fathers, even though almost as frequent as corporal punishment by moth-

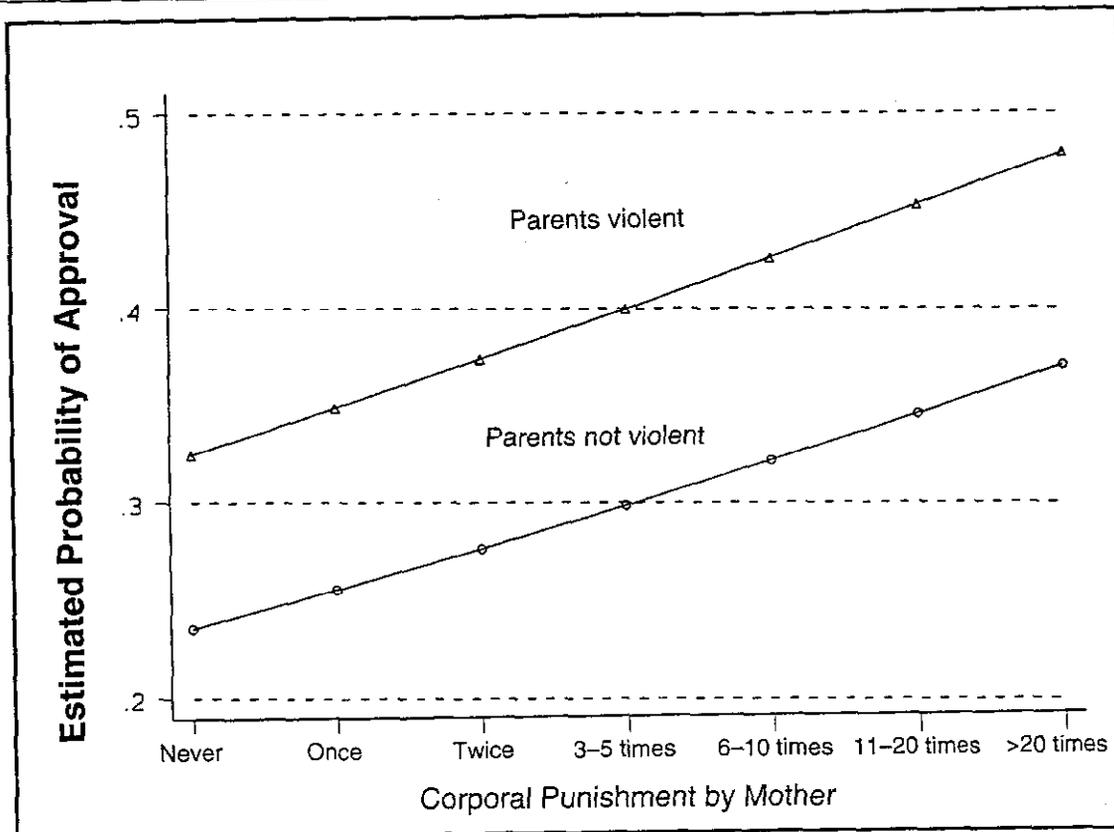
ers (see Table 1), is not significantly related to either depression or marital conflict for men. For women, corporal punishment by fathers is significantly related to an increased odds of depression, but not of marital conflict.

Theoretical Model

Figures 2 and 3 display the results in Table 2 in the form of path diagrams. The diagrams follow the conventions for path analysis based on OLS regression, but because they are based on the logistic regression results, the numbers on each path are the odds ratios. Only paths that are statistically significant at the $p < .05$ level (one-tailed test) are shown. Although the odds ratios that appear on some of these paths may seem small, the effects accumulate across each level of the independent variable (as illustrated in Figure 1).

Assaults by husbands. Figure 2 diagrams the model estimated for men, using assaults by husbands as the dependent variable. The upper path shows a direct relationship between corporal pun-

FIGURE 1. APPROVAL OF A HUSBAND SLAPPING HIS WIFE BY MOTHER'S USE OF CORPORAL PUNISHMENT



ishment by mothers and husband-to-wife assault. The odds ratio of 1.09 shows that each increase of one category in the seven-category corporal punishment index multiplies the odds ratio by 1.09 or 9%. Because the odds ratio is from a model that specified other variables (see Table 2), it is a net relationship after partialing out the effect of the other nine variables in the model.

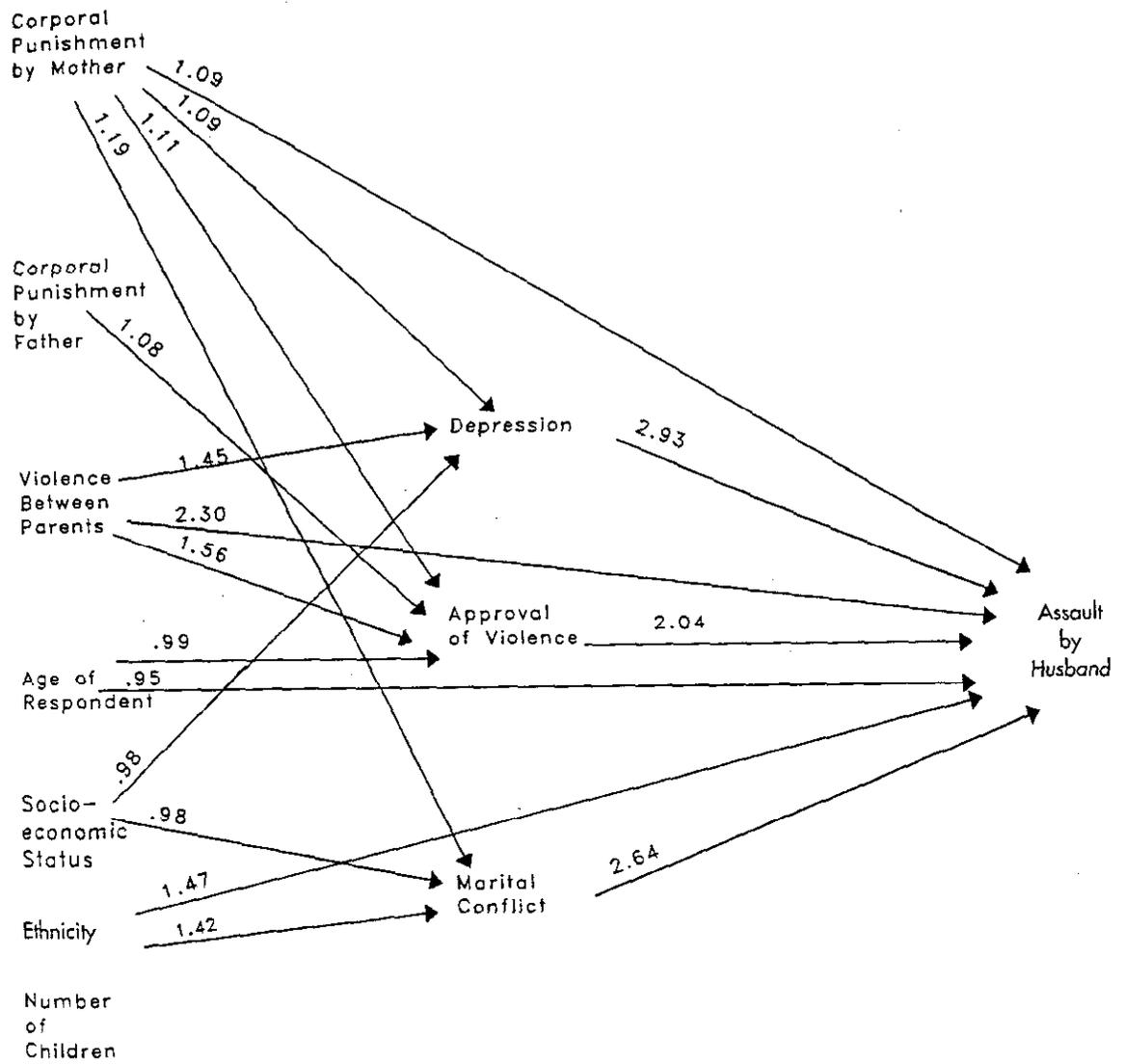
Our main theoretical interest, however, is in the indirect paths, through depression, approval of violence, and marital conflict. The path in Figure 2 from corporal punishment to depression indicates that there is a significant relationship between experiencing corporal punishment as a teen and being depressed. The odds ratio on the path indicates that each increase of 1 unit of corporal punishment by mothers multiplies the odds of depression by 1.09 or 9%. In turn, the path from depression to assaults by husbands indicates that there also is a significant relationship between depression and physical assault. Depression is associated with almost triple the odds of an assault by a husband (odds ratio of 2.93). Thus, the findings support the idea that the link between corporal punishment and marital violence occurs partly be-

cause corporal punishment during adolescence increases the probability of depression.

Moving down Figure 2 to approval of violence reveals significant indirect paths from corporal punishment by each parent to approval of slapping a partner. The odds ratios on these paths show that each increase of 1 unit of corporal punishment by mothers multiplies the odds of approval of violence by 1.11 or 11%. Similarly, the odds of approving violence in marriage are multiplied by 1.08 for each increase of 1 unit in corporal punishment by a man's father. In turn, the path from approval of violence is associated with more than double the odds of an assault by the husband (odds ratio of 2.04). These findings are consistent with the theory that corporal punishment teaches the moral legitimacy of hitting someone who misbehaves, and this, in turn, increases the probability of actually hitting or physically assaulting a spouse who misbehaves—as the partner sees it.

The third element of the theoretical model to account for the link between corporal punishment and assault on a spouse is the possibility that corporal punishment of adolescents restricts their opportunity to learn nonviolent modes of conflict resolution and, therefore, increases the probability

FIGURE 2. PATH DIAGRAM FOR HUSBAND-TO-WIFE OVERALL ASSAULT INDEX BASED ON LOGISTIC REGRESSION



Note: Numbers are odds ratios; $n = 1,844$ men.

of a high level of marital conflict. The significant odds ratio of 1.19 on the path from corporal punishment by the mother to marital conflict, coupled with the odds ratio of 2.64 for the path from marital conflict to assault by the husband, are consistent with that aspect of the theory.

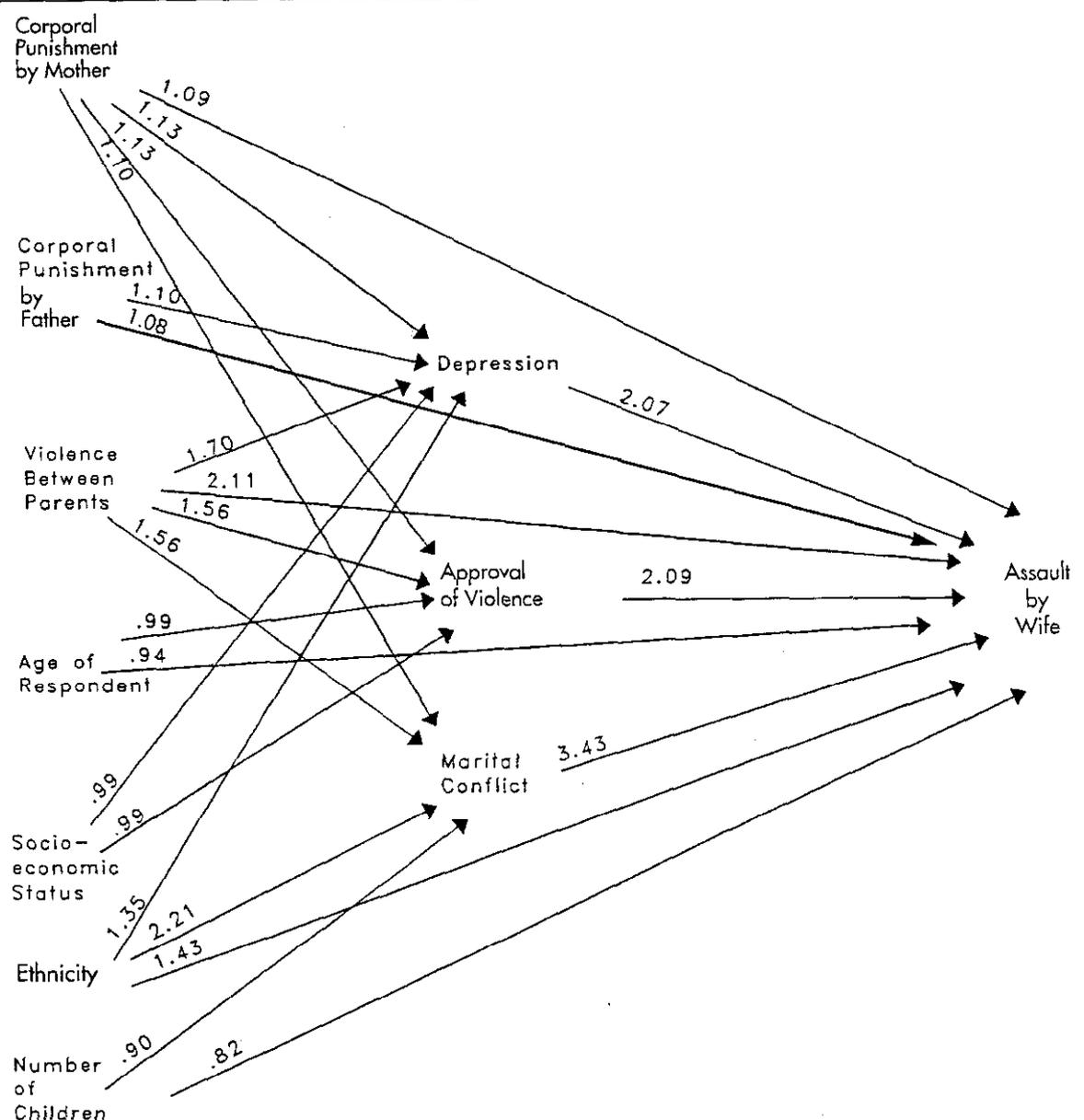
Assaults by wives. Figure 3 diagrams the model estimated for women, which used assaults by women on their partners as the dependent variable. The findings are similar to those in the model estimated for men and are highly consistent with the theory.

The depression component is supported by the paths linking corporal punishment to assault through depression. Each increase of one category

in corporal punishment by the mothers of the women in this study multiplies the odds of being high in depression by 1.13 or 13% for each increase of 1 unit in the 7-unit corporal punishment measure. Similarly, the odds ratio of 1.10 on the path from corporal punishment by fathers indicates that each increase of 1 unit in being hit as an adolescent by a woman's father multiplies the odds of depression by an average of 10%. In turn, the odds ratio of 2.07 on the path from depression shows that a high level of depression more than doubles the probability of an assault by the wife.

Moving down Figure 3 to approval of violence, it can be seen that corporal punishment by a woman's mother multiplies the odds of her approval of hitting a partner by 1.13. Approval of

FIGURE 3. PATH DIAGRAM FOR WIFE-TO-HUSBAND OVERALL ASSAULT INDEX BASED ON LOGISTIC REGRESSION ANALYSES



Note: Numbers are odds ratios; $n = 2,557$ women.

violence, in turn, is associated with doubling the odds that a wife will assault her husband. Finally, corporal punishment of adolescent women by their mothers multiplies the odds of couple conflict by 1.10, and a high level of marital conflict multiplies the odds of a woman assaulting her partner by 3.43.

Replication of the Findings Using Severe Assaults

We also investigated the possibility that the findings just presented might be different if the dependent variable were severe assaults associated

with a greater risk of causing injury than slapping, shoving, and throwing things. The severe assaults are measured using the last five items on the Conflict Tactic Scales. The results for severe assaults were similar to those just reported. For example, the logistic regression in panel A of Table 2 shows eight statistically significant independent variables and a pseudo R^2 of .16. The equivalent logistic regression, using the presence of severe assault as the dependent variable, found five significant independent variables (depression, violence approval, marital conflict, respon-

dent's age, and ethnicity) and a pseudo R^2 of .19. Similarly, the logistic regression in part B of Table 2 resulted in nine significant independent variables and a pseudo R^2 of .18. The replication using severe assault as the dependent variable also resulted in eight significant effects (depression, violence approval, marital conflict, corporal punishment by mothers, witnessing violence in the family of origin, respondent's age, ethnicity, and number of children) and a pseudo R^2 of .22. Copies of the logistic regression analyses of severe assaults are available from the first author.

Other Direct and Indirect Effects

This research focused on understanding the process by which corporal punishment of adolescents leads to violence in marriage later in the life cycle. In doing that, however, a number of other findings emerged, and although they do not bear on the primary research questions, they deserve at least brief mention. The interrelations among the mediating variables were described previously. Here we examine the links of the exogenous variables to the mediating and dependent variables.

Violence between parents. As other researchers (Jaffe, Wolfe, & Wilson, 1990; Straus, 1992) have found, we found that witnessing violence between parents was associated with an increased probability of assault on one's own partner. For women, witnessing violence also was related to an increased probability of depression, which, in turn, increased the odds of a marital assault. For both men and women, witnessing violence by parents multiplies the odds of approving slapping a partner by 1.56 times. For women, it also increases the probability of couple conflict.

Age. Both Figures 2 and 3 show that age is associated with a decrease in the probability of approving hitting a partner and a decrease in the probability of actually hitting a partner. There were no significant paths from age to any other variable, including marital conflict. Thus, marriages of older couples do not have less conflict, only less violence. Perhaps as partners age, they learn that physical coercion is not an effective way of resolving the inevitable conflicts that occur in families, or perhaps they begin to set different boundaries for what is tolerable at the hands of their partners.

Socioeconomic status. Contrary to our expectations, we found that socioeconomic status was indirectly, rather than directly, related to a lower probability of spousal assault. For both men and women, high socioeconomic status was associated with a lower risk of assaulting a partner because, consistent with many other studies (Dohrenwend et al., 1992) high socioeconomic status was associated with a reduced probability of depression. For men, but not for women, there also was an indirect relationship between socioeconomic status and marital violence through a reduced probability of marital conflict. For women, but not for men, there was an indirect relationship between socioeconomic status and the probability of assaulting a husband through a reduced probability of approving the slapping of a partner.

Ethnic minority. Membership in an ethnic group was associated with a higher probability of marital conflict and of assaulting a spouse for both men and women. In addition, for women, minority group membership was linked to spousal assaults through an increased probability of depression.

Number of children. This was included in the models because of the possibility that the number of children is confounded with the variables of theoretical interest, such as corporal punishment, couple conflict, and depression. For men, as shown by the lack of significant paths in Figure 2, the number of children had no relationship to marital conflict or spousal assault once other variables such as age and socioeconomic status were controlled. Figure 3 shows that for women, having more children was associated with a decreased probability of marital conflict and a decreased probability of assaults on husbands.

SUMMARY AND CONCLUSIONS

This research tested a theoretical model that incorporated three components—normative approval of violence, depression, and marital conflict (which we used as a proxy for deficits in conflict-resolution skills)—to explain why corporal punishment increases the risk later in life of assaulting a spouse. The results of logistic regression analyses of data from a nationally representative sample of husbands and wives were largely consistent with this model. Corporal punishment in adolescence was associated with an increased probability of approving violence against one's spouse, experiencing depression as an adult, and

elevating levels of marital conflict. In turn, each of these components was associated with an increased probability of physically assaulting one's spouse. Thus, as hypothesized, at least part of the association between corporal punishment and adult spousal violence is explained by these three variables. Moreover, the associations remained significant, despite controlling for age, socioeconomic status, ethnic group, and witnessing violence between parents.

Methodological Considerations

Although the analysis controlled for a number of possible sources of spurious findings, several other methodological issues need to be considered to properly evaluate the findings and to inform and guide future research.

First, no matter how many variables are statistically controlled in nonexperimental research, there is always the possibility that some unspecified variable might be the true source of the observed relationships. For example, one potential confound that we were unable to control for was whether parents who used corporal punishment also engaged in violence that was severe enough to be classified as physical abuse. It is possible that the confounding of corporal punishment with physical abuse accounts for at least part of the findings reported here. However, some of our previous research included data that made it possible to exclude abused children, and, in each case, we found that corporal punishment continued to have significant harmful side effects (Straus, 1994a; Vissing, Straus, Gelles, & Harrop, 1991; Yodanis, 1992). Nevertheless, confounding corporal punishment with physical abuse is a concern that future research needs to address.

Second, the corporal punishment data were obtained by asking respondents whether they were hit by their parents when they were adolescents. The effects of recall inaccuracies, including selective memory biases among individuals who hit their spouses, must, therefore, be considered. Recall of corporal punishment, for example, may help perpetrators of marital violence justify actions that they have taken for other reasons. Given that more than half of the population recalls being hit at this age, we believe it is unlikely that only those who were predisposed to violence recall such events. However, as in the case of confounding corporal punishment with physical abuse, studies that do not depend on recall, including prospective studies, find that corporal

punishment is associated with subsequent violence (Strassberg, Dodge, Pettit, & Bates, 1994) and antisocial behavior (Straus et al., 1995).

Third, the belief that a good, hard spanking is sometimes necessary implies that corporal punishment is not harmful if it is used only rarely. To evaluate this possibility, we examined differences among respondents who were never hit, hit only once, hit only twice, hit three times, etc. Those analyses showed that each increase in corporal punishment of an adolescent, starting with just one instance, was associated with an increase in the approval of violence and in actual violence toward a spouse (Straus, 1994a, Chart 7-2). A study by Turner and Finkelhor (1996), using data from interviews with children from 10 to 16 years old, also found that even one or two instances of corporal punishment at that age were associated with an increase in stress in children. However, it is possible that infrequent corporal punishment of still younger children is relatively harmless, and that issue needs to be investigated.

Policy Implications

To the extent that the findings can be interpreted as reflecting a causal relationship between the corporal punishment of adolescents and assaulting a spouse later in life, eliminating or reducing corporal punishment can contribute to reducing marital violence because more than half of American parents hit adolescent children. The results of this research also suggest that a reduction in corporal punishment would have a beneficial impact on one of the most pervasive forms of psychological distress—depression. Close to 7% of the population will experience an episode of major depression at some point in their lives (Charney & Weissman, 1988). Moreover, mood disorders account for more use of mental health services than any other psychiatric disorder and are responsible for the majority of all attempted and completed suicides (Boyer & Guthrie, 1986; Charney & Weissman, 1988). Thus, in addition to the association of corporal punishment with physical violence, the severity of the consequences associated with depression also underscores the need for a greater understanding of the deleterious effects of corporal punishment.

Police and prosecutorial policies intended to reduce partner violence have been weakly implemented. Our findings on the link between corporal punishment and the approval of slapping a spouse suggest that corporal punishment may be

one of the factors underlying this weak implementation. The police, prosecutors, and judges are, of course, among the more than half of all Americans who have experienced the violence-justifying effects of corporal punishment, and that may be part of the reason the criminal justice system so often fails to act against all but the most egregious cases of marital assault. If these interpretations are correct, ending corporal punishment in childrearing could not only reduce the rate of marital violence, but also contribute to ending the de facto institutional practices that tolerate marital violence.

NOTE

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