

## **Impulsive Corporal Punishment by Mothers and Antisocial Behavior and Impulsiveness of Children**

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**This study tested the hypothesis that corporal punishment (CP), such as spanking or slapping a child for purposes of correcting misbehavior, is associated with antisocial behavior (ASB) and impulsiveness by the child. The data were obtained through interviews with a probability sample of 933 mothers of children age 2–14 in two small American cities. Analyses of variance found that the more CP experienced by the child, the greater the tendency for the child to engage in ASB and to act impulsively. These relationships hold even after controlling for family socioeconomic status, the age and sex of the child, nurturance by the mother, and the level of non-corporal interventions by the mother. There were also significant interaction effects of CP with impulsiveness by the mother. When CP was carried out impulsively, it was most strongly related to child impulsiveness and ASB; when CP was done when the mother was under control, the relationship to child behavior problems was reduced but still present. In view of the fact that there is a high risk of losing control when engaged in CP, even by parents who are not usually impulsive, and the fact that impulsive CP is so strongly associated with child behavior problems, the results of this study suggest that CP is an important risk factor for children developing a pattern of impulsive and antisocial behavior which, in turn, may contribute to the level of violence and other crime in society. ©1998 John Wiley & Sons, Ltd.**

Corporal punishment, such as spanking on the buttocks or slapping a child's hand, has been defined as an act carried out with the intention of causing a child to

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Contract grant sponsor: National Institute of Mental Health

Contract grant number: T32MH15161

Contract grant sponsor: University of New Hampshire

experience physical pain, but not injury, for purposes of correction or control of the child's behavior (see Straus, 1994, for an analysis of this definition). If aggression is defined as an act carried out with the intention of hurting another person physically, psychologically, or economically then corporal punishment (called CP from here on) can be seen as a type of aggressive act because the intent is to cause the child to experience at least mild physical pain. As an act of aggression, CP may be either instrumental or expressive, or both. CP would be instrumental aggression to the extent that the pain is inflicted as a means of correcting and teaching the child. It would be expressive aggression to the extent that pain is inflicted because the parent is angry and wants the child to experience pain as an end in itself.

## **CORPORAL PUNISHMENT AND IMPULSIVE AGGRESSION**

By impulsive we mean behavior that is carried out with little or no forethought and control, hot tempered actions, acting without planning or reflection, and failing to resist urges (Hoghughi, 1992; Lorr and Wunderlich, 1985; Monroe, 1970; Murray, 1938). CP may be done either impulsively or when the parent is under control. If, as defined in the previous paragraph, CP is an act of aggression, then when CP is impulsive, it can be said to be an act of impulsive aggression. To the extent that CP is impulsive, it means that children experience impulsive aggression as part of their most crucial socialization relationship. Thus, impulsive corporal punishment (ICP) may be an important risk factor for impulsiveness and other behavior problems in children. There is already strong evidence that CP by itself is a risk factor for many behavior problems (Straus, Sugarman, and Giles-Sims, 1997). Impulsiveness in CP might be an additional risk factor, or, as explained below, there might be an interactive effect of CP and impulsiveness.

## **IMPULSIVE CORPORAL PUNISHMENT AND CHILD BEHAVIOR PROBLEMS**

It has been 40 years since Sears, Maccoby, and Levin (1957) found that CP by parents was associated with aggression by the child, as well as weak development of conscience. Since then a large number of other studies have investigated this issue. A meta-analysis of 88 studies found that 110 of the 117 effects analyzed indicated that CP was related to aggression, lack of empathy, mental health problems, and other maladaptive behaviors, leading to the conclusion that "... although ... corporal punishment does secure *immediate compliance* it also increases the likelihood of eleven negative outcomes" (Thompson, 1999). Perhaps the relationship between CP and aggression by children is contingent on impulsiveness in using CP. One basis for thinking that it might be is the advice from some pediatricians and psychologists that, if parents use CP, it should be done when under control (Dobson, 1988; Friedman & Schonberg, 1996; Larzelere, 1994). The advice to be a "controlled" spanker reflects an assumption (whether explicitly

stated or not) that only ICP has harmful side effects. On the other hand, a few parent educators (Rosemond, 1994a) recommend CP while the parent is angry and we think that many parents believe that to do otherwise is cold blooded. This discussion raises two questions. One question is to what extent parents spank impulsively. The other question is whether CP in general, or only ICP, is associated with child behavior problems. We will examine these questions by reviewing previous research and then by presenting new empirical findings.

## **Prevalence of Impulsive Corporal Punishment (ICP)**

We located only two studies that provided data on the prevalence of ICP, and even these two did not use the term "impulsive" to describe their findings. However, their operational definitions are consistent with what we are calling impulsive CP or ICP. Carson (1986) studied 186 parents in a small New England city. Her findings can be interpreted as showing that about a third of those parents spanked impulsively. Holden and Miller (1997) differentiated between instrumental spankers and emotional spankers. Emotional spankers felt irritated, frustrated, and out of control when spanking their children, and they were just under a third of the sample of 90 parents who used CP. In addition, we located a third study which provides an indication of the potential for parents to use CP impulsively. A Canadian national survey (Institute for the Prevention of Child Abuse, 1989) found that 80% of parents reported at least rarely "[coming] close to losing control" when disciplining their children.

## **Effects of Impulsive Corporal Punishment**

Search of electronic data bases failed to locate studies of specific effects of ICP on children. However, two of the three studies just cited provide some indirect evidence on the relation of ICP to specific child behaviors. Holden and Miller (1997) found that emotional spankers were less likely to believe that spanking would lead to attainment of short- and long-term parental goals for the child—such as immediate compliance, positive socialization outcome, and respect for authority. Carson (1986) found parents who spanked when they lost control tended to be more likely to see spanking as ineffective.

In addition to this limited empirical evidence, there are theoretical grounds for expecting adverse effects from ICP. Impulsivity implies inconsistency in punishment and inconsistent punishment has been found to be associated with poor suppression of undesirable behavior (Acker & O'Leary, 1988). Impulsive use of CP might have a modeling effect, teaching the child to be impulsive, and impulsivity has been found to be associated with conduct disorders, recidivistic anti-social behavior, and deviant parenting, among other problem behaviors (Hoghghi, 1992). ICP is also more likely to lead the child to experience the spank or slap as something that occurs as result of the characteristics of the parent rather than as something done for the child's well being. When CP is perceived as parent centered, it is more likely to create resentment and anger, to undermine the bond

between child and parent that is so important for avoiding antisocial behavior (Straus & Hill, 1997), and to be associated with low self-esteem (Larzelere, Klein, Schumm, & Alibrando, 1989).

## HYPOTHESES

The present study was designed to provide additional data on the prevalence of ICP and to address three hypotheses concerning the relation of ICP to child behavior problems.

- (i) The more CP of any kind used by the mother, the greater the child's impulsiveness and antisocial behavior (ASB).
- (ii) The more impulsive the CP, the greater the child's impulsiveness and ASB.
- (iii) There is a significant interaction between CP and impulsivity in using CP such that CP is associated with ASB and impulsiveness by the child only when CP is impulsive.

Several child and family characteristics that might influence the relationship between CP and child behavior problems were included in the models tested, including mothers' nurturant behavior, mothers' use of interventions other than CP, child age, child sex, and family socioeconomic status. We also felt it was important to determine the extent to which these variables interacted with CP, for example, to examine the idea that CP is not harmful when it is done by loving parents.

## METHOD

### Sample

The data are from a study in two counties in Minnesota conducted in 1993. The study was intended to be the time 1 measurement for a quasi-experiment to evaluate the effectiveness of a program to change attitudes and behavior about CP. Both counties are prosperous agricultural regions containing small manufacturing and service center cities. The interviews covered a range of parent and child behaviors so that the comparison of treatment and control counties could examine a variety of antecedents and effects of CP.

Random digit dialing was used to select a sample of mothers of children age 2 through 14. Preliminary screening questions were used to determine whether the household contained a mother and an eligible age child. If there was more than one child in this age range, the child with the closest birthday was selected as the focus of the interview. Interviews were conducted with 1,003 mothers. Methodological studies of telephone versus face to face interviews have sometimes shown one or the other to be superior, but more usually that they produce equivalent results (Gano-Phillips & Fincham, 1992; Smith, 1989) and phone interviews have been used in an increasing number of studies of family and child development issues in recent years (Finkelhor & Dziuba-Leatherman, 1994; Straus, Hamby, Finkelhor, Moore, & Runyan, 1998). The limited budget for this study prevented interviewing both

parents. Mothers were chosen as the respondents because mothers have much more of the day to day responsibility for child care. Nine hundred and thirty three mothers of the 1,003 mothers interviewed provided complete data about themselves and their children on all the items of interest to the present study.

The children were primarily from two-parent families (95.1%). They were about equally divided between boys (54%) and girls (46%), and their mean age was 8.6 (median 9). The mean and the median age of the mothers was 37. They had been married an average of 13.9 years, and had a median of two children living at home (mean = 2.5). Consistent with census data on the socioeconomic composition of these two communities, the sample was almost entirely Caucasian and 31% of the mothers and 35% of the fathers were college graduates. These socioeconomic characteristics suggest that additional research will need to be done to determine whether the present findings apply to low education or ethnic minority children as well.

## Independent Variables

### *Corporal Punishment*

Mothers were asked how often in the past six months they had "spanked, slapped or hit" the target child when the child "does something bad or something you don't like, or is disobedient." The response categories, which are taken from those used in the Conflict Tactics Scales (Straus *et al.*, 1998) were never, once, twice, three to five times, six to ten times, 11–20 times and more than 20 times.

The behavior of children whose parents never use CP is an issue of great theoretical and practical importance. We identified 189 such children on the basis of their mother responding "never spanked" to questions on the age at which CP was first used and the age at which CP was used the most. We also created a category "Not in the last six months." These are children whose mothers said they had not used CP during the six month referent period of the study, but in response to a question on the age at which they first or most frequently used CP indicated an age. The measure of CP used for the ANOVA consists of the following six categories: never ( $n = 189$ ), not in the past six months ( $n = 408$ ), once ( $n = 98$ ), twice ( $n = 81$ ), three to five times ( $n = 86$ ), and six or more times ( $n = 71$ ).

### *Impulsive Corporal Punishment (ICP)*

Mothers were asked "When you had to spank or hit (the target child) how often did you spank because you were so angry that you 'lost it'?" The "lost it" behavior in this question is consistent with definition of impulsive behavior given earlier. No referent period was given for this question; therefore, it could refer to ICP at any time during the child's life. Response categories were "0 = never, 1 = rarely, 2 = about half the time, 3 = usually, and 4 = always or almost always". For purposes of the ANOVA analysis, the following four categories were used: 0 = the 189 mothers who indicated they had never used CP, and who, therefore, of necessity, constituted a separate no ICP group; 1 = used CP but never lost it ( $n = 402$ ); 2 = used CP but rarely lost it ( $n = 279$ ); and 3 = used CP and lost it half or more of the time ( $n = 63$ ).

The question used to measure ICP has shortcomings. It implies that anger is the reason for ICP, but other circumstances, not just anger, could lead to ICP. Our informal observation leads us to believe that many parents do not realize the extent to which they spank when out of control. To the extent that this is correct, the prevalence rate from this measure is a minimum estimate.

### *Mothers' Nurturance*

This measure was included because proponents of CP (Dobson, 1988; Friedman & Schonberg, 1996; Rosemond, 1994a;b) argue that CP is effective and not harmful when administered by warm, loving parents. A related reason to take nurturance into account is the possibility that frequent CP may be associated with low nurturance. If so, low nurturance rather than CP *per se* might account for what seems to be a harmful effect of CP.

The nurturance scale consisted of three items: "How often in the past six months have you: comforted and helped him/her when he/she had some kind of problem?, hugged or kissed him/her or done something else to show your love?, talked to (the target child) about things that bothered him/her?" Response categories were "0 = never, 1 = rarely, 2 = about half the time, 3 = usually, and 4 = always or almost always". Responses were summed and the score could range from 0 to 12. The scores ranged from four to 12 with a mean of 11.0 (SD = 1.3). Despite the skewed distribution, it was possible to divide the sample into the following five categories: eight or less ( $n = 51$ ), nine ( $n = 77$ ), ten ( $n = 125$ ), 11 ( $n = 196$ ), and 12 ( $n = 484$ ). However, this does not rule out the possibility that even the children in the lowest of the five groups may have experienced sufficient nurturance to counteract all effects of CP. The alpha reliability coefficient for this scale was .56.

### *Non-CP Discipline*

CP is typically a response to misbehavior, particularly after one or more other interventions have been tried repeatedly and the misbehavior they are meant to correct recurs. Consequently, if a study finds a correlation between CP and misbehavior, the correlation may be interpreted just as plausibly as the effect of misbehavior on CP, as the effect of CP on misbehavior. To control for the effect of prior child misbehavior on later child misbehavior requires a longitudinal or experimental study. In this cross sectional study we tried to achieve some degree of control for this "intervention-selection bias" (Larzelere, Schneider, Larson, & Pike, 1996) by using a scale we developed to provide a proxy for the seriousness of misbehavior. The scale is a measure of the extent of non-CP disciplinary interventions such as use of time out. It is based on the assumption that parents would not engage in these disciplinary interventions if there were no misbehavior (as perceived by the parent). Therefore, the frequency of such disciplinary interventions reflects the extent of the child's misbehavior. To the extent that is correct, the non-CP discipline scale could control for the misbehavior that evoked the CP.

To measure non-CP discipline, the mothers were asked how often, in the past six months, when the child had done something bad, or something the mother did not

like, or had been disobedient she "talked to him or her calmly about a discipline problem, sent him or her to his or her room or made him or her do 'time out', took away something or some privilege like going somewhere." Response categories were "never, once, twice, three to five times, six to ten times, 11 to 20 times, and more than 20 times". Response categories were transformed to the midpoints of the category (3-5 = 4, 6-10 = 8, 11-20 = 15, more than 20 = 25) and were summed. The resulting non-CP intervention scale scores ranged from zero to 75 with a mean of 26.6 and a standard deviation of 19.6. The alpha reliability was .71. The scores were grouped into the following four categories for use in the ANOVAs: 15 times or less frequently ( $n = 326$ ), 16-30 times ( $n = 244$ ), 31-45 times ( $n = 196$ ), more than 45 times ( $n = 167$ ).

### *Child Age*

It is important to examine the interaction of age and CP because proponents of CP argue that CP has harmful side effects only among older children. Age was coded into the following categories: 2-4 years ( $n = 164$ ), 5-9 years ( $n = 339$ ), 10-12 years ( $n = 247$ ), and 13-14 years ( $n = 183$ ). Two years was chosen as the starting age because it is the most common age at which parents begin to spank (Straus, 1994). Five years was chosen as the beginning of the next age category because it is the age at which many children begin formal education (i.e., kindergarten). Ten years was chosen as the beginning of the third age category because it is an increasingly common starting age for middle school enrollment. Thirteen years was chosen as the beginning age for the final age category because it marks the beginning of adolescence.

### *Child Sex*

There were 503 boys and 430 girls in the sample. It is important to control for the sex of the child because sex is confounded with both CP and misbehavior. Parents tend to use CP more often with boys (Giles-Sims, Straus, & Sugarman, 1995; Straus, 1994) and boys tend to exhibit higher rates of misbehavior than girls. This could produce a spurious correlation. It is also possible that the effects of CP might differ by sex.

### *Family Socioeconomic Status (SES)*

Although studies examining the relation of SES to CP have been inconsistent (Straus, 1994), there is enough evidence of SES differences to make it advisable to control for possible confounding of CP and SES. We measured SES using a scale that included the educational level of the mother, educational level of the mother's partner, and total annual household income. A factor analysis found one factor which accounted for 59.5% of the variance. The SES scale is the factor score for that factor. The alpha reliability of this scale was .65. The scores were recoded into quintiles to ensure that each group would be represented by a sufficient number of children to use SES as an independent variable in the ANOVAs. One hundred and eighty-two families fell into the lowest SES category, 187 in the second lowest, 189

in the middle candela, 186 fell into the fourth quintile, and 189 fell into the highest SES category.

## **Dependent Variables**

### *Child Antisocial Behavior (ASB)*

The name antisocial behavior is meant to describe the 11 behaviors in the scale, and not to denote any underlying psychopathology. Generally, these behaviors involve acting out against other people including the child's family, teachers, and peers. Eight of the items were asked regardless of the age of the child. These items asked how often in the past six months the child was "cruel or mean to other kids, bullies; cruel or mean to or insults you; denies doing something he or she really did; hit a brother or sister, hit other kids; hit you or other adults; damages or destroys things; and stolen money or something else". Three items differed based on the age of the child. Mothers of preschool-age children (2–4) were asked how frequently their child "refuses to cooperate; repeats misbehavior after being told not to do it; and misbehaves with a baby sitter or in day care." Mothers of school-age children were asked how frequently their child "disobeys you; rebellious; and discipline problems at school." Response categories were 0 = never, 1 = rarely, 2 = sometimes, 3 = frequently. In order to make the items that differed for different age children statistically equivalent, all the items were transformed to Z scores before they were summed to create the scale scores. Thus all items are expressed as deviation from the mean of the children for whom the question was asked. The alpha reliability for this scale was .81. The scale scores were normalized and transformed into ZP scores. A ZP score (Straus, 1980) is a linear transformation that results in a distribution with a mean of 50 and a standard deviation of 20.

### *Child Impulsiveness*

Impulsiveness was measured by two items asking how frequently in the previous six months the child had "temper tantrums, hot temper" and "acts in unpredictable, explosive ways, impulsive". These items were chosen to reflect two often cited features of impulsivity—acting quickly without apparent thought, reflection, or planning or failing to resist urges (Hoghughi, 1992; Lorr & Wunderlich, 1985; Murray, 1938) and being quick or hot tempered (Hoghughi, 1992; Monroe, 1970). Response categories for these items were "0 = never, 1 = rarely, 2 = sometimes, 3 = frequently". The item scores were transformed to Z scores and summed. The alpha reliability score for this scale was .56. Scale scores were normalized and transformed into ZP scores. The correlation between the child ASB scale and the child impulsiveness scale measure was .60. Although this is a substantial correlation, 64% of the variance is not shared, leaving open the possibility that the findings on child impulsiveness could differ from those for ASB. In fact, we expect that ICP will be more strongly related to child impulsiveness than to ASB because that relationship could reflect modeling, which is a more direct linking process than the processes which might bring about a relationship with ASB, such as anger and resentment.



## Data Analysis

We computed a seven-way analysis of variance using child's ASB as the dependent variable and another using child's impulsiveness as the dependent variable. The independent variables were frequency of CP, impulsivity of CP, mother's nurturant behavior, mother's non-CP discipline, child's age, child's sex, and family socioeconomic status (SES). We restricted the analyses to the main effects and the two-way interactions of CP and ICP with the other independent variables and with each other because those were the theoretically relevant interactions for this research and because higher order interactions would have resulted in empty cells and singular variance-covariance matrices.

The ANOVAs were computed using the "regression approach" option in SPSS/PC, namely "All effects are assessed simultaneously, with each effect adjusted for all other effects in the model." (Nurius, Furrey, & Berliner, 1992, p. 257). Thus, the test for each independent variable controls for the other six independent variables.

The 189 mothers who had never used CP could not be included in the fully crossed ANOVAs because, for these mothers, the cells for ICP would have no cases and therefore singular variance-covariance matrices would result. Instead, mean ASB and child impulsiveness scores were computed separately for the no-CP group as part of the process of obtaining adjusted interaction effect means (see below). Differences between these means and other main effect means were tested using Tukey-Kramer planned paired comparison tests for unequal sample sizes (Toothaker, 1991).

To obtain CP by ICP interaction effect means for the dependent variables, adjusted for the influence of all other independent variables, separate ANOVAs of CP at each level of ICP were performed with all other independent variables included in each model. The "no impulsive spanking" level ANOVAs included the "never spanked" group because, by definition, these mothers could not have spanked impulsively. To test differences between interaction means, Tukey-Kramer planned paired comparison tests for unequal sample sizes were performed using Cicchetti's (1972) solution to the number-of-means problem (Toothaker, 1991). Comparisons that are significant at the .05 level are listed in the footnotes to Tables 1 and 2.

## RESULTS

### Prevalence of CP and ICP

#### *Corporal Punishment*

The percent of mothers in this sample who used CP during the six months preceding the interview varied by age of the child: 59.3% of mothers of children age 2-4, 45.8% of mothers of children 5-9, 20.5% of mothers of children 10-12, 14.4% of mothers of children 13-14. Although these are high rates, they are lower than those found for other national samples of American children (Giles-Sims *et al.*, 1995; Straus, 1994; Straus & Stewart, 1998), even after taking into

Table 1. Analysis of Variance for Child Antisocial Behavior\*

Source of Variation	Sum of Squares	DF	Mean Square	F	<i>p</i>
<i>Main Effects</i>					
CP	2877.99	4	719.50	2.69	.030
ICP	10657.91	2	5328.95	19.94	.001
Nurturance	8326.16	4	2081.54	7.79	.001
Non-CP Interventions	27385.11	3	9128.37	34.16	.001
Age	852.42	3	284.14	1.06	.364
Sex	3921.89	1	3921.89	14.68	.001
SES	853.55	4	213.39	.80	.526
<i>2-Way Interactions</i>					
CP × ICP	4189.01	8	523.636	1.96	.050
CP × Nurturance	1794.65	16	112.17	.42	.978
CP × Non-CP Interventions	3265.45	12	272.12	1.02	.430
CP × Age	2303.03	12	191.92	.72	.734
CP × Sex	1289.85	4	322.46	1.21	.307
CP × SES	4352.22	16	272.01	1.02	.435
ICP × Nurturance	4218.32	8	527.29	1.97	.048
ICP × Non-CP Interventions	1426.08	6	237.68	.89	.502
ICP × Age	817.90	6	136.32	.51	.801
ICP × Sex	621.25	2	310.62	1.16	.314
ICP × SES	2476.23	8	309.53	1.16	.323
Explained	132973.39	206	645.50	2.42	.001
Residual	143500.52	537	267.23		

\* This ANOVA was performed on the 744 cases who used corporal punishment and for which complete data were available. In addition, paired comparisons were tested (see Data Analysis section) for the means in Figures 1 through 3. The .05 level was used as the criterion. These tests included comparisons of the antisocial behavior scores of children whose mothers never used CP with all other CP groups ( $N = 933$ ).

In Figure 1 the *n*'s for each CP group (from left to right) are 189, 408, 98, 81, 86 and 71. The following paired comparisons were significant: Never versus all other CP groups, not for six months versus twice. The alpha for the comparison of the Not in 6 months group and the six or more times group was  $.05 < p < .10$ .

In Figure 2 the *n*'s for each ICP group (from left to right) are 402, 279, 63. The following paired comparisons were significant: Never impulsive versus all other ICP groups, Rarely impulsive versus 50%+.

In Figure 3 the *n*'s for each CP group in the *Impulsive* 50%+ category are 26, 7, 9, 11, 10. The following paired comparisons were significant: Never spanked versus all the CP groups, not for six months versus twice, 3–5 times, and 6+ times. The *n*'s for each CP group in the *Rarely Impulsive Category* are 145, 28, 31, 36, 39. The following paired comparison were significant: Never spanked vs all other CP groups, Not for 6 months versus 6+ times. The *n*'s for each CP group in the *Never Impulsive* category are 189, 237, 63, 41, 39, 22. The following paired comparisons were significant: Never spanked versus once and twice.

consideration differences in the referent periods (previous week, six months, or year). The relatively low prevalence of CP is consistent with the high scores for Minnesota (relative to other states) on many child well-being indicators (Annie E. Casey Foundation, 1996) and the high socioeconomic status of these two counties.

### *Impulsive Corporal Punishment*

Of the 744 mothers who had used CP sometime during their child's life, 8.5% reported doing so impulsively half or more of the times they used CP, and 37.5% reported this happened only rarely, making a total of 46% impulsive at least sometime in the child's life.

Table 2. Analysis of Variance for Child Impulsiveness\*

Source of Variation	Sum of Squares	DF	Mean Square	F	p
<i>Main Effects</i>					
CP	4759.39	4	1189.85	4.64	.001
ICP	5494.70	2	2747.35	10.71	.001
Nurturance	6470.70	4	1617.68	6.30	.001
Non-CP Interventions	14711.11	3	4903.70	19.11	.001
Age	2927.74	3	975.91	3.80	.010
Sex	427.64	1	427.64	1.67	.197
SES	2443.10	4	610.77	2.38	.051
<i>2-Way Interactions</i>					
CP × ICP	4889.29	8	611.16	2.38	.016
CP × Nurturance	2393.85	16	149.61	.58	.897
CP × Non-CP Interventions	4316.20	12	359.68	1.40	.161
CP × Age	1465.37	12	122.11	.48	.929
CP × Sex	2870.64	4	717.66	2.80	.026
CP × SES	4092.27	16	255.77	1.00	.459
ICP × Nurturance	751.40	8	93.92	.37	.938
ICP × Non-CP Interventions	3059.78	6	509.96	1.99	.066
ICP × Age	567.40	6	94.57	.37	.899
ICP × Sex	12.27	2	6.13	.02	.976
ICP × SES	5776.15	8	722.02	2.81	.005
Explained	103358.44	206	501.74	1.96	.001
Residual	137802.36	537	256.61		

\* This ANOVA was performed on the 744 cases who used corporal punishment and for which complete data were available. In addition, paired comparisons were tested (see Data Analysis section) for the means depicted in Figures 4 through 6. The .05 level was used as the criterion for statistical significance. These tests included comparisons of the impulsive behavior scores of children whose mothers never used CP with all other CP groups (N = 933).

In Figure 4 the n's for each CP group are the same as Figure 1. The following paired comparisons were significant: Never spanked versus all other CP groups, not for 6 months versus twice. The alphas for the comparisons of the Not In 6 Months group with the 3-5 Times and 6 or More Times groups were  $.05 < p < .10$ .

In Figure 5 the n's for each CP group are the same as Figure 2. The following paired comparisons were significant: 50% + versus the two other impulsive CP groups. The alpha for the comparison of the Never Impulsive group with the Rarely Impulsive group was  $.05 < p < .10$ .

In Figure 6 the n's for each CP group within each level of ICP are the same as in Figure 3. The following paired comparisons were significant ( $p < .05$ ): 50% + *Impulsive*: Never spanked versus once, twice, 3-5 times, 6 + times, Not for 6 months versus all other CP group; *Rarely Impulsive*: Never spanked versus not for 6 months, twice, 3-5 times, 6 + times, not for 6 months versus 6 + times, once versus 6 + times; *Never Impulsive*: never spanked versus twice, not for 6 months versus twice.

An alternative estimate of the extent of ICP which is likely to be more accurate because of less recall error is based on only those mothers who reported using CP during the past 6 months. Of the 336 mothers who used CP in the past six months, 11% reported impulsive CP half or more of the time and 40% reported impulsive CP only rarely, making a total of 51% impulsive in the past six months.

### *Links Between Frequency of CP and Impulsive Use of CP*

Frude & Gross (1979) found that the more CP parents used, the greater the percentage who were worried that they would go too far and injure their child. This finding led us to compare the percentage of mothers who said they spanked impulsively according to how often they used CP. We found that the percent of

mothers who used CP impulsively at least some of the time increased dramatically from 36% of mothers who used CP only once during the referent period, to 49% of those who used CP twice, 55% who used CP three to five times, and 69% who used CP six or more times. These data indicate that the more CP a parent uses, the greater the chance that it will be done impulsively.

## Relation of CP and ICP to Child's Antisocial Behavior

### Main Effects

Figure 1 shows that the more CP is used by the mother, the greater the ASB by the child. The first row in the main effects section of Table 1 indicates that this relationship is statistically significant. The paired comparison tests found significantly greater ASB scores ( $p < .05$ ) for all five groups of children who had experienced CP compared to the "never" group. Other significant paired comparisons are given in the footnotes to Table 1.

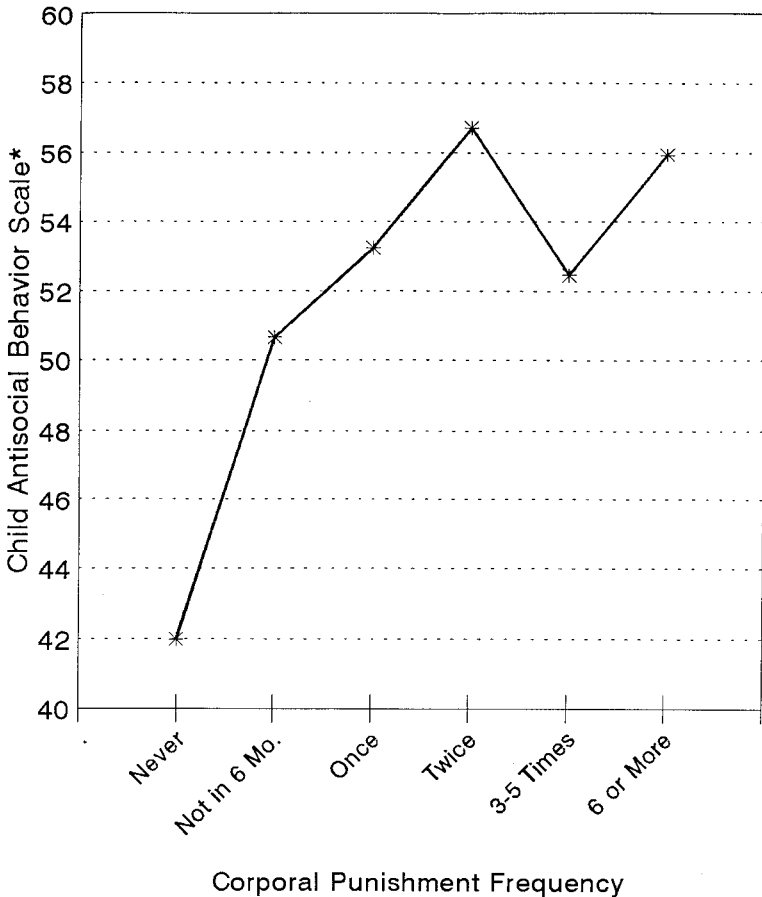


Figure 1. Child antisocial behavior by frequency of mother's use of corporal punishment. \* Means adjusted for mother's impulsive corporal punishment, mother's nurturance, mother's non-CP interventions child age, child's sex, and family SES

The second row of Table 1 indicates that ICP is significantly related to ASB, and Figure 2 shows a clear linear relationship between ICP and child's ASB. Paired comparison tests found statistically significant differences ( $p < .05$ ) in ASB for all possible comparisons.

Three of the other five independent variables were significantly related to ASB. The means (not shown) indicate: (i) The more nurturance by the mother, the lower the child's ASB. (ii) Girls had lower ASB scores than boys. (iii) The more non-CP discipline the higher the ASB. In our opinion, this last finding supports the idea that, like CP, non-CP disciplinary interventions are used reactively, and supports our decision to include non-CP discipline in the model as a proxy to control for the level of misbehavior by the child.

### Interactions

Of the ten possible interactions of CP and impulsiveness with the other independent variables and with each other, only the interactions of CP with impulsiveness and

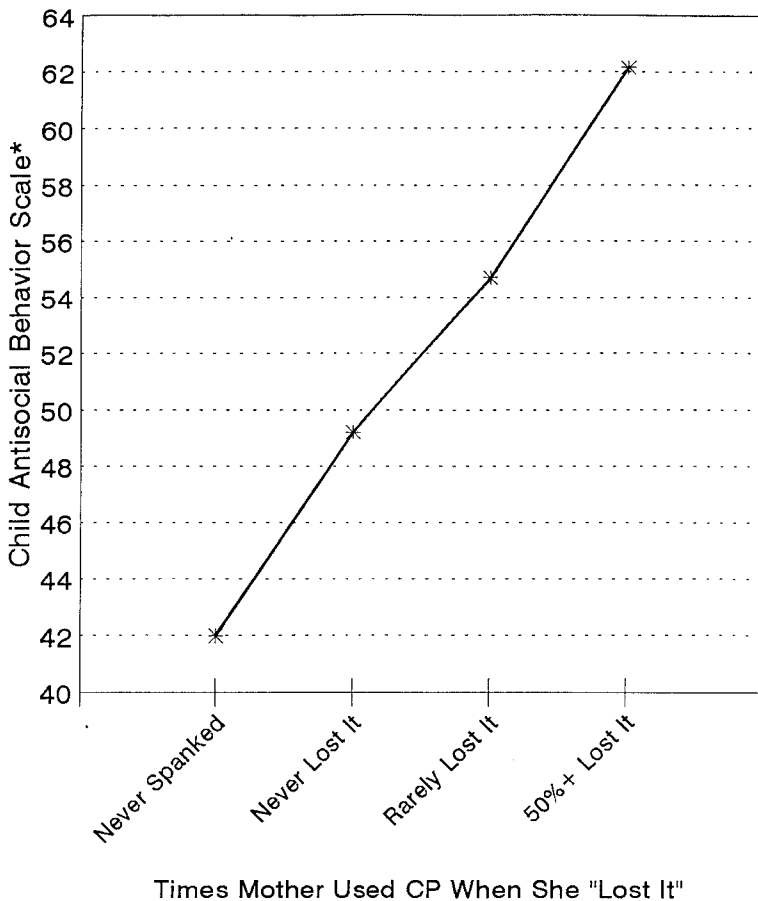


Figure 2. Child antisocial behavior by mother's impulsive corporal punishment. \* Means adjusted for mother's impulsive corporal punishment, mother's nurturance, mother's non-CP interventions child age, child's sex, and family SES

with nurturance were significant. Figure 3 plots the interaction of CP with impulsive use of CP. The means in the dashed upper line of Figure 3 show that the relation of CP to ASB was greatest and most consistent for children whose mothers were impulsive half or more of the times they used CP. Paired comparison tests found significantly greater ASB for all comparisons with the “never” group and also for all but one of the comparisons with the “not in last six months” group. The exception was for the difference between “not in last six months” and “once” but even this difference would have met the less stringent criterion of  $p < .10$ . Thus, among mothers who use CP impulsively half or more of the time, any amount of CP in the past six months was associated with greater ASB than that by children of mothers who never used CP.

Among mothers who reported only rare ICP (dotted line in center of Figure 3), all five comparisons with children who never experienced CP were significant, indicating that when there is even occasional ICP, any CP past or present is associated with more ASB than by children of mothers who never used CP.

The solid line at the bottom of Figure 3 shows that the ASB of children of mothers who reported no ICP also increased with CP. However, their ASB then declined for

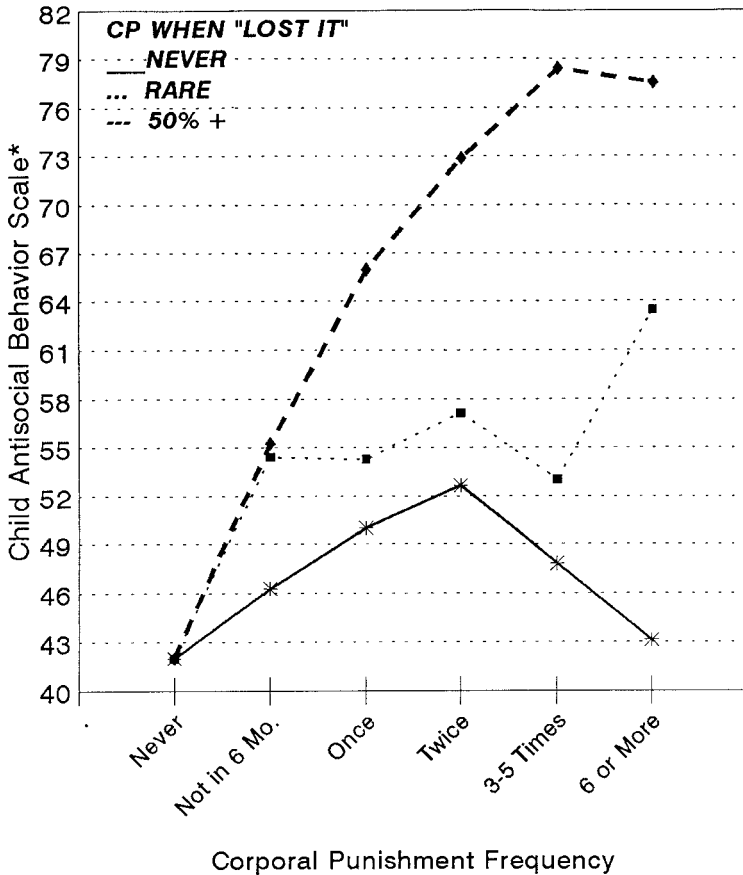


Figure 3. Child antisocial behavior by interaction of frequency of mother’s use of corporal punishment and mother’s use of impulsive corporal punishment. \* Means adjusted for mother’s impulsive corporal punishment, mother’s nurturance, mother’s non-CP interventions child age, child’s sex, and family SES

the two highest levels of CP. Consistent with the finding reported earlier, that frequent CP is associated with impulsive use of CP, there are relatively few cases in these two groups (see footnote to Table 1). In view of the lack of a significant difference for these two groups the decrease could be a random fluctuation.

The ANOVA also found a significant interaction of ICP and nurturance. However, with the exception of one cell mean, regardless of the mother's level of nurturance, the more impulsively she reported using CP, the greater her child's ASB. The significant interaction may have occurred because small cell sizes led to difficulty detecting differences between some of the means.

## Relation of CP and ICP to Child's Impulsive Behavior

### *Main Effects*

Figure 4 shows impulsive behavior by the child increased as the frequency of CP increased. The first row of Table 2 indicates that this relationship is significant at the .001 level. Paired comparison tests indicate that child impulsiveness was greater

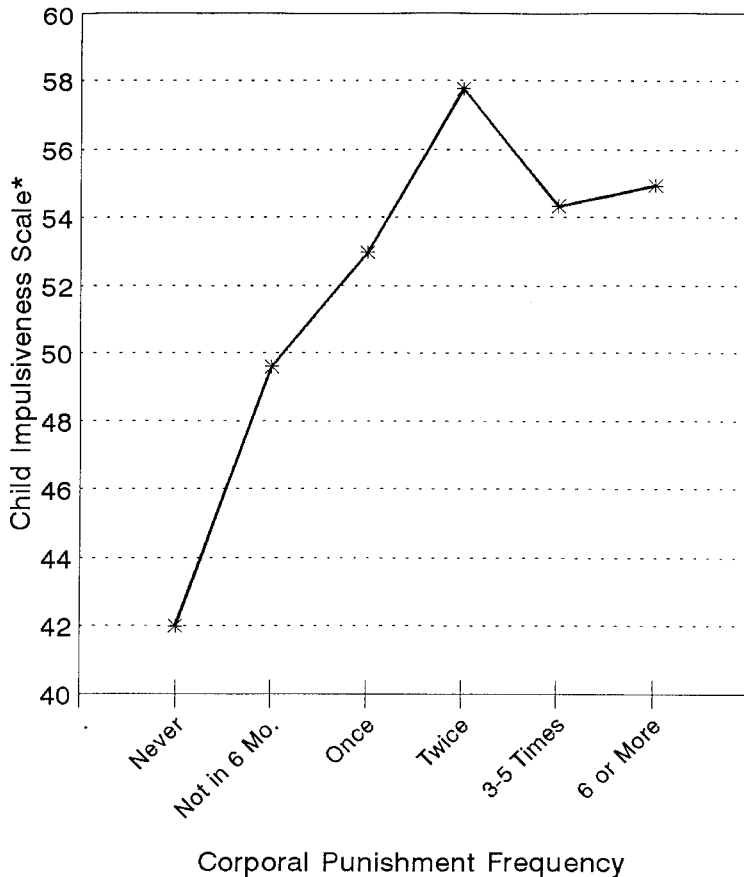


Figure 4. Child impulsiveness by frequency of mother's use of corporal punishment. \* Means adjusted for mother's impulsive corporal punishment, mother's nurturance, mother's non-CP interventions child age, child's sex, and family SES

among children of mothers in all CP frequency groups than among children of mothers who had never used CP. Other significant paired comparisons are given in the footnote to Table 2.

The second row of Table 2 indicates that ICP is significantly related to impulsive behavior by the child. Figure 5 shows that the relationship is virtually linear and that the differences are large (the difference in child's impulsive behavior between the "never" group and the "50% or more" group is almost one standard deviation). The results of paired comparison tests for differences between specific means are given in the footnote to Table 2.

The rows of Table 2 for the five other independent variables in the main effects section show that all except the sex of the child are significantly related to child impulsive behavior: the means (not shown) indicate that the more nurturant the mother, the less impulsive the child; and the more non-CP interventions the mother carried out, the more impulsive the child. The relationships for age of child and SES are somewhat U shaped: impulsiveness by the child is lower for the early school age children (5-9) than for younger children, but then increases for children

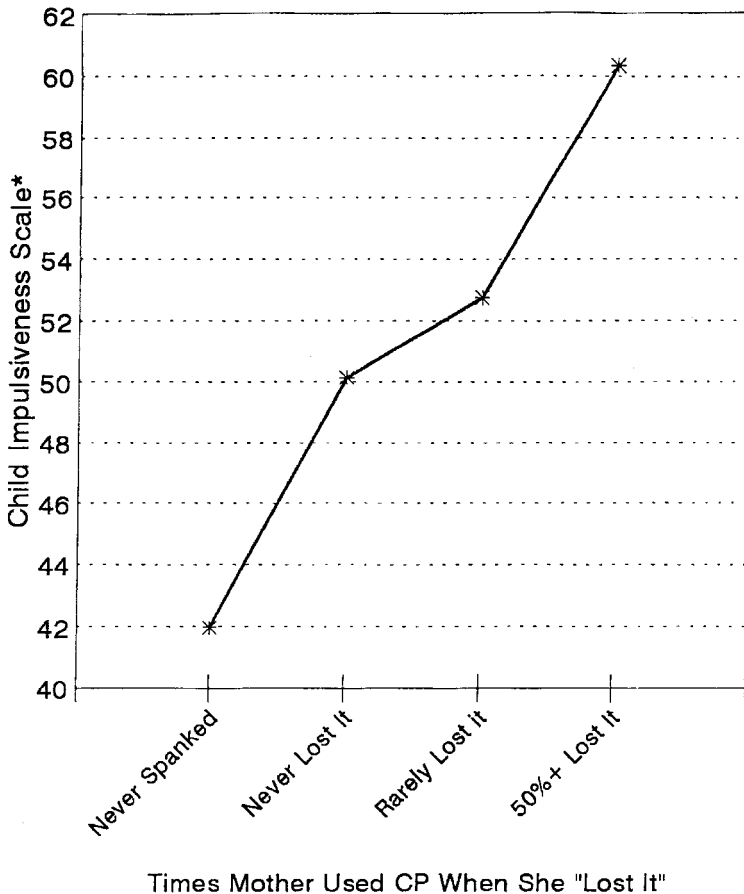


Figure 5. Child impulsiveness by mother's use of impulsive corporal punishment. \* Means adjusted for mother's impulsive corporal punishment, mother's nurturance, mother's non-CP interventions child age, child's sex, and family SES



aged 10–12 and 13–14. For SES, children in the second quintile had lower impulsive behavior scores than the lowest SES children, but impulsiveness increased with each SES quintile after that.

### Interactions

The first row in the interactions section of Table 2 indicates a significant interaction of CP with impulsive use of CP. The dashed line at the top of Figure 6 shows that, as was found for ASB, the effect of CP on child impulsiveness is greatest for the children of mothers who use CP impulsively half or more of the time. The paired comparisons indicate that for children of these mothers, CP even once in the prior six months was significantly associated with much more child impulsiveness than among children who did not experience CP during the six month referent period or who never experienced CP.

Among mothers who only rarely used CP impulsively, the dotted line in the center of Figure 6 shows that child's impulsivity increases as CP increases. The

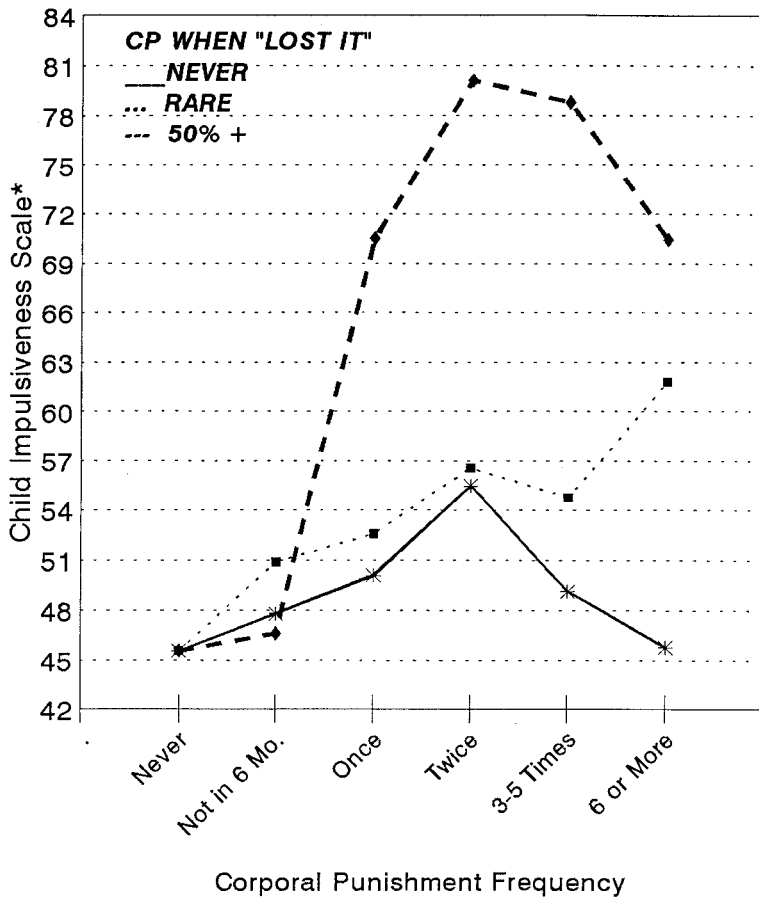


Figure 6. Child impulsiveness by interaction of frequency of mother's use of corporal punishment and mother's use of impulsive corporal punishment. \* Means adjusted for mother's impulsive corporal punishment, mother's nurturance, mother's non-CP interventions child age, child's sex, and family SES

paired comparison tests found that, for the most part, any CP, past or present, was associated with more child impulsiveness than for children in the "never spanked" group (see Table 2 for specific paired comparison tests).

The impulsiveness of children of mothers who used CP non-impulsively (solid line in Figure 6) increased as the frequency of CP increased, but only up to the "twice in the last six months" category, and then decreased. Consistent with the very small *N* values for the two high CP groups, and consistent with the findings on ASB for these two groups of children, the paired comparison tests with these two cells were not significant and maybe a random fluctuation.

Two other interactions that are relevant for the focus of this study are shown in Table 2. Inspection of the means for one of these, the sex of the child, found a stronger relation between CP and impulsive behavior by boys than by girls. The other significant interaction was for ICP with family SES. We were unable to identify a meaningful pattern among the means for this interaction.

## DISCUSSION AND CONCLUSIONS

Before summarizing and discussing the findings, it is important to remind readers about some of the limitations of the study. One limitation is that the measures of CP and other parental behaviors did not include the father's behavior. In addition, both the child behavior and the data on mothers behavior were obtained from interviewing mothers. Perceptual biases or self-justification (conscious or unconscious) might affect the mother's report of her disciplinary practices and child misbehavior. Fortunately, there have been other studies which assessed child behavior independently, for example by observing children in school (Strassberg, Dodge, Pettit, & Bates, 1994) or from official records of criminal convictions (McCord, 1991; Straus, 1991) and these show links between CP and ASB that cannot be attributed to parental perceptions.

Another limitation is that the study considered only two aspects of CP. Unstudied aspects of CP include the nature of CP delivery (hitting with the hand versus belts and paddles), whether a single instance of CP included many spanks, slaps or hits, and the intensity of the blows. Additional aspects of parenting context that have yet to be addressed include the consistency of discipline, how clearly and explicitly parents communicate rules and expectations for behavior, and the goals CP (or any other discipline strategy) is employed to meet. Gough & Reavey (1997), for example, suggest that parents may spank at least some of the time based on satisfaction of *their* needs rather than to provide moral guidance to their children. Such self-oriented versus child-oriented CP may affect how nurturant and caring the child perceives the parent to be, which may, in turn, affect child outcome variables (Larzelere *et al.*, 1989). The feedback between child behavior and parent behavior (Holden, Coleman, & Schmidt, 1995; Patterson & Dishion, 1988) must also be addressed to obtain the most adequate understanding of CP.

The most important limitation is that the findings are based on a cross sectional rather than a longitudinal or experimental design. The usual limitations of cross sectional designs for making causal inferences are exacerbated in research on the effects of CP because it can safely be assumed that child misbehavior causes parents

to use CP. Thus, the link between CP and child behavior problems found by so many studies may simply reflect the fact that CP is one of many disciplinary tactics that parents use to correct misbehavior. We attempted to take this intervention-selection artifact (Larzelere *et al.*, 1996) into account by using the extent of non-CP discipline as a proxy for the level of child misbehavior. We found that, at all four levels of non-CP intervention, CP, and especially ICP, was associated with more child ASB and impulsiveness. We interpret these findings as showing that when CP is used in addition to other disciplinary strategies, it tends to make things worse. This interpretation is strengthened by the findings from four recent longitudinal studies (Brezina, 1998; Gunnoe & Mariner, 1997; Straus & Paschall, 1998; Straus *et al.*, 1998). All three found that the more parents responded to misbehavior at time 1 by CP, the greater the *increase* in ASB from time 1 to time 2.

This study also has certain strengths, starting with the fact that it examines the effects of CP in more detail than previous studies. Specifically, rather than treating CP as present or absent, or differentiating only on the basis of the chronicity of CP, this study took into account one of many other dimensions of CP previously mentioned—impulsiveness in CP.

In comparison with previous studies which measured CP in a specific time period such as the previous week, month, six months, or year, the present study also identified children who, at least according to the mother, had never experienced CP. It is particularly important to identify children who have not experienced CP because it is so widely believed that CP is “sometimes necessary” (Straus & Mathur, 1996). Parents of toddlers who do not use CP make up a small but growing portion of the population (Straus & Stewart, 1998). Several other countries, beginning with Sweden, have laws against CP by parents as part of their civil code. At the same time, this trend has evoked concern that lack of CP will produce a generation of antisocial and out of control children. Thus, the inclusion of a “never spanked” group in this study begins to fill a void in the literature. It can be considered a starting point for addressing individual and societal concerns about the effects of discipline without CP. With these strengths and weaknesses in mind, what can be concluded from this study?

## Prevalence of CP and ICP

Although both proponents of CP and opponents agree that ICP is harmful to children, the pro-CP side implies that most parents spank when under control. Our study of a sample of mothers of 2 to 14 year old children in two small Minnesota cities found that, of the mothers who used CP during the previous six months, 51% had done so when out of control on at least one occasion. Only 11% of this 51% said that ICP characterized half or more of the instances of CP, but we believe the percent of mothers who reported ICP and the proportion of impulsive instances were seriously underestimated by the data available for this research. We are now developing methods that may provide a more complete assessment. However, even taking the 51% figure at face value, ICP seems to be much more prevalent than proponents of CP imply.

## Relation of CP and ICP to Child Behavior Problems

We found that the more CP is used and the more impulsive it is, the more ASB and the more impulsive behavior by children, even after controlling for all five of the other independent variables. We also found a significant interaction of CP with impulsiveness in using CP. This interaction is mainly due to a much stronger relationship between CP and child behavior problems for children whose mothers used CP impulsively most often.

### CP with Young Children by Loving Parents

Our findings do not support the view that CP has no harmful side effects when applied to children of 2–6 by loving parents (Friedman & Schonberg, 1996). If this were correct, we should have found a significant interaction of CP with the age of the child and with the nurturance of the mother, but neither was statistically significant. Putting it directly, the tendency for CP to be associated with higher child ASB and impulsiveness was found within all age groups and all levels of maternal nurturance.

## CONCLUSIONS

Although both CP *per se* and impulsive use of CP are related to child behavior problems, two aspects of the findings suggest that ICP is a stronger risk factor than CP *per se*. First, comparison of the plot lines for CP and ICP (Figure 1 compared to 2, Figure 4 compared to 5) shows stronger and more linear relationships for ICP than for CP *per se*. In addition, the interaction of CP with impulsivity of CP revealed (Figures 3 and 5) that the strongest relationship between CP and child behavior problems occurs among the children of mothers who were frequently impulsive when using CP. Although the weakest relationship between CP and child behavior problems was for children of mothers who avoided ICP, it was strong enough for there to be a statistically significant relationship between CP and child behavior problems, even when CP is not done impulsively.

Bearing in mind the limitations of the cross sectional design, the findings suggest that CP and ICP may be important risk factors for children developing a pattern of impulsive and antisocial behavior. Moreover, we believe CP, and especially ICP, may be part of the etiology of the high level of violence and other crime in society because in our study at least half of parents who used CP used CP impulsively at least some of the time, and because the long-term risks associated with CP have been demonstrated by three longitudinal studies (Brezina, 1988; Gunnoe & Mariner, 1997; Straus *et al.*, 1997). We conclude that children and society are likely to benefit if parents rely on other discipline methods and avoid or minimize CP. We believe that reducing CP in the socialization of children will be aided by the passage of non-punitive legislation similar to that in Sweden (Durrant & Olsen, 1997; Newell, 1989) which sets a national goal of no CP and provides education and support to help parents achieve that goal.

## ACKNOWLEDGEMENTS

This article is part of a research program on corporal punishment at the Family Research Laboratory. A publications list will be sent on request. The work has been supported by National Institute of Mental Health grant T32MH15161 and the University of New Hampshire. We would like to thank the members of the 1997–98 Family Research Laboratory Seminar group for their thoughtful feedback on a previous draft of this paper. In particular, we wish to acknowledge Victoria Banyard, Ellen Devoe, David Finkelhor, Patricia Hashima, E. Milling Kinard, and M. J. Paschal.

## REFERENCES

- Acker, M. M., & O'Leary, S. G. (1988). Effects of consistent and inconsistent feedback on inappropriate child behavior. *Behavior Therapy, 19*, 619–624.
- Annie E. Casey Foundation. (1996). *Kids count data book: state profiles of child well-being*. Baltimore, MD: Annie E. Casey Foundation.
- Brezina, T. (1998). Adolescent-to-parent violence as an adaptation to family strain: An empirical examination. *Journal of Youth and Society*, submitted.
- Carson, B. A. (1986). *Parents who don't spank: Deviation in the legitimation of physical force*. Unpublished Ph.D dissertation, University of New Hampshire.
- Cicchetti, D. V. (1972). Extension of multiple-range tests to interaction tables in the analysis of variance: A rapid approximate solution. *Psychological bulletin, 77*, 405–408.
- Dobson, J. C. (1988). *The strong willed child: Birth through adolescence*. Wheaton, IL: Tyndale.
- Durrant, J. E., & Olsen, G. M. (1997). Parenting and public policy: Contextualizing the Swedish corporal punishment ban. *Journal of Social Welfare and Family Law, 19*(4), 443–461.
- Finkelhor, D., & Dziuba-Leatherman, J. (1994). Children as victims of violence: A national survey. *Pediatrics, 94*, 413–420.
- Friedman, S. B., & Schonberg, S. K. (1996). Consensus statements. In S. B. Friedman & S. K. Schonberg (Eds.), *The Short- and Long-term consequences of corporal punishment*, (Supplement to *Pediatrics*, Vol. 98, pp. 853–856). American Academy of Pediatrics.
- Frude, N., & Goss, A. (1979). Parental anger: A general population survey. *Child Abuse and Neglect, 3*, 331–333.
- Gano-Phillips, S., & Fincham, F. D. (1992). Assessing marriage via telephone interviews and written questionnaires: A methodological note. *Journal of Marriage and the Family, 54*, 630–635.
- Giles-Sims, J., Straus, M. A., & Sugarman, D. B. (1995). Child, maternal and family characteristics associated with spanking. *Family Relations, 44*, 170–176.
- Gough, B., & Reavey, P. (1997). Parental accounts regarding the physical punishment of children: Discourses of disempowerment. *Child Abuse and Neglect, 21*, 170–430.
- Gunnoe, M. L., & Mariner, C. L. (1997). Toward a developmental-contextual model of the effects of parental spanking on children's aggression. *Archives of Pediatric and Adolescent Medicine, 151*, 768–775.
- Hoghugh, M. (1992). *Assessing child and adolescent disorders: A practice manual*. Newbury Park, CA: Sage.
- Holden, G. W., Coleman, S. M., & Schmidt, K. L. (1995). Why 3-year-old children get spanked: Parent and child determinants as reported by college-educated mothers. *Merrill-Palmer Quarterly, 41*, 431–452.
- Holden, G. W., & Miller, P. C. (1997, April). *Cognitive versus emotional parenting: Alignments between child-rearing cognitions, emotions, and reported behavior*. Paper presented at the Biennial Meeting of the Society for Research in Child Development, Washington, DC.
- Institute for the Prevention of Child Abuse (1989). Survey of Canadian parental attitudes. *Newsbrief, Edition 3*.
- Larzelere, R. E. (1994). Should the use of corporal punishment by parents be considered child abuse?—No. In M. Mason & E. Gambrill (Eds.), *Debating Children's Lives: Current Controversies on Children and Adolescents* (pp. 204–209). Thousand Oaks: Sage.
- Larzelere, R. E., Klein, M., Schumm, K. M., & Alibrando, S. J. (1989). Relations of spanking and other parenting characteristics to self-esteem and perceived fairness of parental discipline. *Psychological Reports, 64*, 1140–1142.

- Larzelere, R. E., Schneider, W. N., Larson, D. B., & Pike, P. L. (1996). The effects of discipline responses in delaying toddler misbehavior recurrences. *Child and Family Therapy, 18*, 35–37.
- Lorr, M., & Wunderlich, R. A. (1985). A measure of impulsiveness and its relation to extroversion. *Educational psychological measurements, 45*, 251–257.
- McCord, J. (1991). Questioning the value of punishment. *Social Problems, 38*(2), 167–179.
- Monroe, R. R. (1970). *Episodic behavioral disorders*. Cambridge: Harvard University Press.
- Murray, H. (1938). *Explorations in personality*. New York: Oxford University Press.
- Newell, P. (1989). *Children are people too: The case against physical punishment*. London: Bedford Square.
- Nurius, P. S., Furrey, J., & Berliner, L. (1992). Coping capacity among women with abusive partners. *Violence and Victims, 7*, 229–243.
- Patterson, G. R., & Dishion, T. J. (1988). Multilevel family process models: Traits, interactions, and relationships. In R. A. Hinde & J. Stevenson-Hinde (Eds.), *Relationships within families: Mutual influences* (pp. 283–310). Oxford: Clarendon.
- Rosemond, J. K. (1994a). Should the use of corporal punishment by parents be considered child abuse? “No”. In M. Mason & E. Gambrell (Eds.), *Debating children's lives: Current controversies on children and adolescents* (pp. 215–216). Thousand Oaks: Sage.
- Rosemond, J. K. (1994b). *To spank or not to spank: A parents handbook*. Kansas City: Andrews and McKeel.
- Sears, R. R., Maccoby, E. C., & Levin, H. (1957). *Patterns of Child Rearing*. Evanston: Row Peterson.
- Smith, M. D. (1989). Woman abuse: The case for surveys by telephone. *Journal of Interpersonal Violence, 4*, 308–324.
- Strassberg, Z., Dodge, K. A., Pettit, G. S., & Bates, J. E. (1994). Spanking in the home and children's subsequent aggression toward kindergarten peers. *Development and Psychopathology, 6*, 445–461.
- Straus, M. A. (1980). *The ZP Scale: A percentages Z-Score*. Unpublished Manuscript, University of New Hampshire.
- Straus, M. A. (1991). New theory and old canards about family violence research. *Social Problems, 38*, 0–197 (reply to Kurz, Loseke, and McCord critiques in *Social Problems, 38*, 155–179).
- Straus, M. A. (1994). *Beating the devil out of them: Corporal punishment in American families*. San Francisco: Jossey-Bass/Lexington.
- Straus, M. A., Hamby, S. L., Finkelhor, D., Moore, D. W., & Runyan, D. (1998). Identification of child maltreatment with the parent-child Conflict Tactics Scales: Development and psychometric data for a national sample of American parents. *Child Abuse and Neglect, 22*, 249–270.
- Straus, M. A., & Hill, K. A. (1997, July 1). *Corporal punishment, child-to-parent bonding, and delinquency*. Paper presented at the 5th International family violence research conference, Durham, NH.
- Straus, M. A., & Mathur, A. (1996). Social change and change in approval of corporal punishment by parents from 1968 to 1994. In D. Frehsee, W. Horn, & K.-D. Bussmann (Eds.), *Family violence against children: A challenge for society* (pp. 91–105). New York: deGruyter.
- Straus, M. A., & Paschall, M. J. (1988, August). *Corporal punishment by mothers and child's cognitive development: A longitudinal study*. Paper presented at the 14th World Congress of Sociology, Montreal, Quebec, Canada. Durham, NH: Family Research Laboratory, University of New Hampshire.
- Straus, M. A., & Stewart, J. H. (1998). *Corporal punishment of American children: National data on prevalence, trends, and relationship to child & family characteristics*. Paper presented at the 14th World Congress of Sociology, Montreal.
- Straus, M. A., Sugarman, D. B., & Giles-Sims, J. (1997). Spanking by parents and subsequent antisocial behavior of children. *Archives of pediatric and adolescent medicine, 151* (August), 761–767.
- Thompson, E. E. (1999). The short- and long-term effects of corporal punishment on children: A meta-analytic review. *Psychological Bulletin*, in press.
- Toothaker, L. E. (1991). *Multiple comparisons for researchers*. Newbury Park: Sage.