Severe physical punishment and mental health problems in an economically disadvantaged population of children and adolescents

Punição física grave e problemas de saúde mental em população de crianças e adolescentes economicamente desfavorecida

Isabel Altenfelder Santos Bordin,[1] Cristiane Silvestre Paula,[1,2]
Rosimeire do Nascimento,[1] Cristiane Seixas Duarte[3]

Abstract

*Objective: To estimate the prevalence of severe physical punishment of children/adolescents in a low-income community, and to examine child mental health problems as a potential correlate. **Method:** This study is a Brazilian cross-sectional pilot study of the World Studies of Abuse in Family Environments. A probabilistic sample of clusters including all eligible households (women aged 15-49 years, son/daughter < 18 years) was evaluated. One mother-child pair was randomly selected per household (n = 89; attrition = 11%). Outcome (severe physical punishment of children/adolescents by mother/father) was defined as shaking (if age ≤ 2 years), kicking, choking, smothering, burning/scalding/branding, beating, or threatening with weapon. Three groups of potential correlates were examined: child/adolescent (age, gender, physical/mental health); mother (education, unemployment, physical/mental health, harsh physical punishment in childhood, marital violence); father (unemployment, drunkenness). Severe marital violence was defined as kicking, hitting, beating or use of /threat to use a weapon. The following standardized questionnaires were applied by trained interviewers: World Studies of Abuse in Family Environments Core Questionnaire, Child Behavior Checklist, Self-Report Questionnaire. **Results:** Outcome prevalence was 10.1%. Final logistic regression models identified two correlates: maternal harsh physical punishment in childhood (total sample, OR = 5.3, p = 0.047), and child/ adolescent mental health problems (sub-sample aged 4-17 years, n = 67, OR = 9.1, p = 0.017). **Conclusions:** Severe physical punishment of children/adolescents is frequent in the studied community. The victims have a higher probability of becoming future perpetrators. When intrafamilial violence occurs, child/adolescent mental health may be compromised*

Descriptors: Mental health, statistics & numerical data; Child abuse; Child psychiatry; Prevalence; Risk factors

Resumo

*Objetivo: Estimar a prevalência de punição física grave de crianças/adolescentes em comunidade de baixa renda e examinar problemas de saúde mental nas crianças/adolescentes como um potencial fator associado. **Método:** Este trabalho é um estudo piloto brasileiro de corte transversal do* World Studies of Abuse in Family Environments. *Foi avaliada uma amostra probabilística de conglomerados, incluindo todos os domicílios elegíveis (mulheres de 15-49 anos, filho/filha < 18 anos). Uma dupla mãe-filho foi aleatoriamente selecionada por domicílio (n = 89; perda amostral = 11%). O desfecho clínico (punição física grave de crianças/adolescentes por mãe/pai) foi definido como sacudir/chacoalhar (se ≤ 2 anos), chutar, esganar, sufocar, queimar, espancar ou ameaçar com arma. Três grupos de potenciais fatores associados foram examinados: criança/adolescente (idade, sexo, problemas de saúde física/mental); Mãe (escolaridade, desemprego, problemas de saúde física/mental, punição severa na infância, violência conjugal); Pai (desemprego, embriaguez). Violência conjugal grave foi definida como chute, soco, espancamento ou uso/ameaça de uso de arma. Os seguintes questionários padronizados foram aplicados por entrevistadores treinados:* World Studies of Abuse in Family Environments Core Questionnaire, Child Behavior Checklist, Self-Report Questionnaire. **Resultados:** *Prevalência do desfecho clínico foi de 10,1%. Modelos finais de regressão logística identificaram dois fatores associados: experiência materna de punição severa na infância (amostra total, OR = 5,3, p = 0,047) e problemas de saúde mental na criança/adolescente (sub-amostra de 4-17 anos, n = 67, OR = 9,1, p = 0,017). **Conclusões:** A punição física grave de crianças/ adolescentes é freqüente na comunidade estudada, sendo que as vítimas têm probabilidade aumentada de se tornarem futuros agressores. Quando ocorre violência intrafamiliar, a saúde mental das crianças e adolescentes pode estar comprometida.*

Descritores: Saúde mental, estatística e dados numéricos; Maus-tratos infantis; Psiquiatria infantil; Prevalência; Fatores de risco

[1] Social Psychiatry Division, Department of Psychiatry, Escola Paulista de Medicina, Universidade Federal de São Paulo (UNIFESP), São Paulo (SP), Brazil
[2] Faculty of Psychology, Universidade Presbiteriana Mackenzie, São Paulo (SP), Brazil
[3] Division of Child and Adolescent Psychiatry, Department of Psychiatry, Columbia University, New York State Psychiatric Institute, New York (NY) USA

Social Psychiatry Division, Department of Psychiatry, Escola Paulista de Medicina, Universidade Federal de São Paulo (Unifesp), São Paulo (SP), Brazil

Correspondence
Isabel A S Bordin
Setor de Psiquiatria Social, UNIFESP-EPM
Rua Botucatu 572, Cj. 101
04023-061 São Paulo, SP, Brazil
Phone/Fax: (55 11) 5572-7018
E-mail: fbordin@dialdata.com.br

Introduction

Evidence of intrafamilial violence has been noted throughout history in different countries and cultures.[1] In 2001, the Pan American Health Organization team on violence and injury prevention[2] completed a literature review on child abuse in Latin America and the Caribbean. Corporal punishment appeared to be more prominent in Latin America while sexual abuse/exploitation was one of the most common types of child abuse in the Caribbean. However, most of the studies examined had questionable validity, since samples were not representative of the whole population. According to the authors, there is a lack of data on child abuse and maltreatment in Latin America and the Caribbean, leaving the magnitude of the problem not clearly known. Difficulties in establishing an epidemiological surveillance system in the region limit not only the understanding of the child abuse situation, but also the implementation of prevention programs to stop it.

In Brazil, population-based studies estimating the magnitude and characteristics of intrafamilial violence against children and adolescents are scarce. Because surveys are usually based on samples of schoolchildren, students who are out of school and may suffer harsh physical punishment are not included in these studies. In the municipality of São Gonçalo, Rio de Janeiro, southeastern Brazil, an epidemiological survey was carried out with 1,685 adolescents chosen at random from public and private schools, revealing that 14.6% of the students had been severely physically abused by the father or the mother.[3] Severe abuse included kicking, hitting with fist, biting, beating and using or threatening to use a knife or gun. In the city of Curitiba, Paraná, southern Brazil, a high frequency of corporal punishment by family members was noted among a sample of fourth, fifth, seventh and eighth graders (n = 472) from three schools serving populations of high, middle, and low socioeconomic background, respectively.[4] Students reported being slapped (48.5%), hit with a belt (43.0%), and hit with a stick (13.5%). In a cross-sectional study[5] with a stratified probabilistic sample of first- to third-graders (n = 454) from public and private schools in the city of Taubaté, São Paulo, southeastern Brazil, parents/caretakers reported lower rates of slapping (36.1%), hitting with a belt (8.8%), and hitting with a stick (2.4%).

As in other countries, many of the Brazilian children who are victims of violence in the family environment are seen in health care services. A study[6] conducted at the Universidade Estadual de Campinas (São Paulo State) with parents/guardians of a random sample of 130 outpatients under 14 years of age showed a prevalence rate of child physical abuse of 10.8%. The authors used different definitions of abuse according to child age. For patients under one year of age, any type of physical aggression by parents/guardians was considered abuse, while body marks were required for patients aged one year and above. However, prevalence may be underestimated due to parental tendency to underreport physical aggression against babies, and the impossibility of identifying less severe forms of abuse in the older group. In addition to underreporting, domestic violence against children is rarely actively searched during medical consultations. A study[7] conducted at the Universidade Estadual do Rio de Janeiro, southeastern Brazil, analyzed the frequency of cases actively identified in a pediatric outpatient service as compared to the percentage of patients spontaneously registered by pediatricians and referred to the Social Work Department due to physical aggression. Information on domestic violence was gathered from 70% of

first-appointment clientele aged 1-12 years during three consecutive months (n = 245). Using the Conflict Tactics Scales: Parent-Child Version, 46.0% of "minor" physical aggression and 9.9% of severe cases were reported. However, in a total of 1,241 pediatric appointments occurred during 12 consecutive months only 14 patients were referred to the Social Work Department due to physical aggression, representing an estimated prevalence rate of 1.1%. This study demonstrated the missed opportunities for detection and calls attention to the need of reviewing the approach to domestic violence by health services.

At the end of the eighties, case notification became mandatory in Brazil, and according to the Child and Adolescent Statute, every municipality was required to have a Council of Guardianship, a community council devoted to the protection of children's rights.[8] Studies[9-16] conducted with the clientele of special services from different Brazilian cities and states showed that: children of both genders were affected by domestic violence; age of victimized children varied from a few days to 18 years; parental involvement in child maltreatment represented the majority of all confirmed cases; and physical aggression was the most frequent type of abuse.

Several factors can make the child more vulnerable to physical aggression within the family environment, including individual factors (gender, age), family-related factors (mental health problems, history of corporal punishment in childhood, marital violence), and sociocultural factors (poverty and unequal income distribution, cultural norms and values, social support).[1] In addition, maltreatment may lead to both short and long-term negative consequences to the child. It includes impact on general health (fractures, lacerations, cerebral lesions) and mental health problems (anxiety, depression, social isolation, suicide, substance abuse, conduct problems, delinquency).[1,17-18] Other consequences of physical violence against children include delays in cognitive development, intellectual deficit, and school failure, in addition to violence and criminality in adolescence and adulthood.[1,18] In a study[19] conducted in a private and in a public school of the city of Porto Alegre, southern Brazil, adolescents involved in physical aggression against pupils or school personnel (n = 36) were compared to non-aggressive peers (n = 40). Aggressive behavior in school was associated with severe physical punishment at home (being beaten or hit with an object such as a stick, broom, cane, or belt) (p < 0.01). Victims of physical abuse were more likely to be older males of low family income.

The present pilot study is part of the World Studies of Abuse in Family Environments (WorldSAFE),[20] a multi-country effort to determine the extent and nature of intrafamilial violence in different cultures. A study of a representative sample of the general population that would indicate the frequency of different forms of physical aggression towards children and adolescents in the family environment and correlates has not been accomplished yet in Brazil. It is clear that a community-based study is needed in order to arrive to a better estimation of the problem of intrafamilial physical violence against children in Brazil, identifying potential associated factors involved in the process. Based on this data, the planning of interventions and preventive programs, which should be both effective and culturally sound to the Brazilian reality, can be accomplished.

Therefore, the objectives of this pilot study were: 1) to estimate the prevalence of severe physical punishment of children and adolescents in an urban poor community in southeastern Brazil; 2) to identify child, mother, and mother's

husband/partner factors associated with severe physical punishment of children; and 3) to identify best associative models of the study outcome for the age groups 0-17 years and 4-17 years.

Method

A cross-sectional pilot study was conducted in a low-income neighborhood from Embu, a city with 238,891 inhabitants located at the boundaries of the city of São Paulo, capital of the state of São Paulo, southeastern Brazil. More than one third (38.1%) of the total population is under 20 years of age.[21]

1. Sample

The Brazilian Institute of Geography and Statistics randomly selected four clusters (geographic areas of maximum internal homogeneity and similar size) based on census units. All households in the selected clusters were visited, and the initial sample included all eligible households from clusters one and two (n = 97). Clusters three and four were sources of replacement in case of sample loss (refusal, mobility and more than three absences in pre-scheduled interviews) according to a consecutive list of eligible households. Each household lost from the initial sample could be replaced once. Eligibility criteria required mothers aged 15 to 49 years with at least one child under age 18 years residing in the household. If there was more than one mother per household or more than one child per mother, only one mother and one of her children were randomly selected in each household. The final sample size included 89 mother-child pairs (attrition rate of 11%).

2. Measurement

The study outcome consisted of child/adolescent experience of severe physical punishment by mother or her husband/partner in the past 12 months, defined as the presence of one or more of the following behaviors: shaking (if age ≤ 2 years); kicking; choking by putting hand or something else around neck; smothering with hand/pillow; burning/scalding/branding; beating (hitting over and over again with object or fist); and threatening with a knife or gun. This definition was based on a consensus among WorldSAFE steering committee members, including behaviors considered severe in Brazil, Chile, Egypt, India, Philippines and USA.

Potential risk factors were examined in three domains: child, mother, and mother's husband/partner. In the child domain, four variables were considered: age, gender, chronic health problems (such as asthma or tuberculosis), and mental health problems. Regarding the mother, six variables were examined: education (never went to school or did not complete second grade vs. completing at least second grade), unemployment (not working for pay at the moment of the interview), physical health problems (poor/bad health in the mother's opinion), mental health problems (score greater than seven at the Self-Report Questionnaire), childhood experience of harsh physical punishment (in the mother's opinion), and being victim of lifetime severe physical marital violence (kicking, hitting, beating or use of/threaten to use a weapon by a residing husband/partner). Considering the husband/partner domain, two potential risk factors were included based on the mother report: unemployment, and getting drunk at least once in the last 12 months.

3. Instruments

The WorldSAFE Core Questionnaire on Domestic Violence is a standardized instrument that investigates intrafamilial violence and associated factors (original questionnaire in English developed by the WorldSAFE steering committee and copyrighted in 1998). Section B includes 33 items representing different child-rearing behaviors from mother and/or her husband partner in the past 12 months. Items were partially derived from the Parent-Child Conflict Tactics Scales[22] with permission of authors, and also included parental behaviors usually noted in developing countries according to the clinical practice and previous WorldSAFE qualitative information (not published). The Core Questionnaire was translated into Portuguese, back translated and field tested before being applied in the pilot study (Brazilian version developed by Bordin IA and Paula CS in 1999).

The Child Behavior Checklist – CBCL 4-18[23] is a standardized parent-report questionnaire with 118 behavior problems that provides a total behavior problem scale T-score to classify children and adolescents in three categories: clinical, borderline, and non-clinical. In the present study, children with mental health problems were those with total behavior problem T-scores in the clinical range (above the 90th percentile according to the American normative sample). Data on content and construct validity, and test-retest and inter-interviewer reliability revealed adequate psychometric properties of the original CBCL 4-18.[23] Initial findings from a validity study showed high sensitivity of the Brazilian version of the instrument, when applied to mothers of low educational level by a trained lay interviewer. In a random sample of pediatric patients aged 4 to 12 years (n = 49), 80.4% of children with one or more psychiatric diagnosis based on ICD-10 were positive for behavior problems according to CBCL (total behavior problem T-score ≥ 60).[24] High sensitivity of CBCL 4-18 was also shown in a consecutive sample of children and adolescents (n = 78) scheduled for first appointment at the mental health outpatient clinic of the Universidade Federal do Rio de Janeiro. When comparing CBCL and K-SADS-PL results, the author noted that 82.8% of children with one or more psychiatric disorders obtained a T-score higher than 63 in the total behavior problem scale of CBCL.[25]

The Self-Report Questionnaire (SRQ-20) is a screening instrument with 20 items to identify psychiatric disturbance in community settings and primary care settings, especially in developing countries.[26] The present version was designed to cover non-psychotic disorders and detects probable cases of depression, anxiety-related disorders and somatization disorders. It covers mental disorders commonly encountered in community and primary care settings, and was applied in the present study to identify mental health problems in mothers or guardians. The Brazilian version of the SRQ-20 has good validity and high reliability.[27] In Brazil, subjects with a SRQ-20 score higher than seven are considered cases since the SRQ-20 presented high sensibility (83%) and specificity (80%) when using the cut-off 7/8.[26,28]

After obtaining a free written informed consent, instruments were individually administered to mothers by trained female interviewers at the community health center, aiming privacy and safety to mothers and interviewers.

The Research Ethics Committee of the Universidade Federal de São Paulo approved the present study. In Brazil, case notification is mandatory except when anonymous questionnaires are applied in population-based studies. In our research, all suspected cases of intrafamilial violence and/or mental disorder were referred to specialized services.

4. Statistical analysis

Statistical analysis was performed using the Statistical Package for Social Sciences® (SPSS) version 10.0. Child, mother and mother's husband/partner domains were individually examined using logistic regression models. For each domain, non-collinear risk factors were forced to enter the model and variables that reached statistical level of significance $p < 0.20$ were selected to enter final logistic regression models. The first final model involved variables with data available to the entire sample (child/adolescent mental health problems excluded due to the restriction of CBCL data to children older than three years). The second final model involved variables with data available to the sub-sample aged 4-17 years (child/adolescent mental health problems included). The backward method was used to obtain reduced logistic regression models including only significant variables ($p < 0.05$).

Results

The final sample included 37 (41.6%) girls and 52 (58.4%) boys. Sixty (67.4%) were children (0-10 years) and 29 (32.6%) were adolescents (11-17 years) (mean age 8 ± 5 years). The great majority of informants (98.9%) were biological mothers, and 13.5% of children were living in single-mother homes. When the mother had a husband/partner residing in the household in the past 12 months, he was the child's biological father in 89.6% of cases. A residing grandparent was present in 16.7% of single-mother homes, compared to 7.2% in households were the mother had a residing husband/partner. Socioeconomic indicators revealed the sample's low living standards: 46.1% of mothers had never gone to school or did not complete second grade, neither the mother nor the father were working for pay in 13.4% of households, 68.5% of homes had no telephone, and 5.6% of homes had no toilets or a toilet outside the dwelling.

Different forms of physical punishment were used as child-rearing methods in the studied community. It is noteworthy the high prevalence of severe physical punishment (10.1%), and non-severe physical punishment (75.3%) - Table 1.

Table 2 summarizes the frequency of potential risk factors for child severe physical punishment considering three domains (child, mother, mother's husband/partner). High rates of maternal low education and unemployment among mothers and fathers indicate the low socioeconomic status of most families involved in the study. Very high rates of mental health problems in children and mothers were also noted. Mother's childhood experience of harsh physical punishment, mother's exposure to lifetime severe physical marital violence, and excessive alcohol use by husbands/partners were risk factors frequently present.

Results from reduced logistic regression models show that in the child domain, age and mental health problems reached statistical significance of $p < 0.20$ and were selected to ENTER final logistic models. In the mother domain, unemployment and exposure to harsh physical punishment in childhood were also selected to enter final models. No variable was selected from the husband/partner domain (Table 3).

Selected variables from child and mother domains were forced to enter final logistic models. When examining all children (n = 89), only mother childhood experience of harsh physical punishment was associated with the study outcome in the final model. When considering the sub-sample of children aged 4-17 years (n = 67), only child behavior problems remained in the final model (Table 4).

Discussion

In Brazil, the present study represents the first initiative of quantitatively examining potential correlates of child severe physical punishment in the family environment in a probabilistic household sample. However, limitations of the study must be recognized such as the small sample size that reduces its statistical power to identify significant correlates, and the cross-sectional design that cannot establish sequence in time between significant associated factors and the study's outcome

Table 1 – Prevalence of child physical punishment by mother and/or her husband/partner in the past 12 months. Data from Jardim Santa Emília, Embu (SP), 1999 (n = 89)

Types of physical punishment	n	%
Any non-severe physical punishment*	67	75.3
Spanking on buttocks with hand only	50	56.2
Twisting ear	31	34.9
Hitting on buttocks with object[#]	26	29.2
Shaking (if age ≥ 3 years)	25	28.1
Slapping on face or back of head	14	15.7
Pinching	14	15.7
Hitting on head with knuckles	13	14.6
Hitting body parts, other than buttocks, with object[#]	13	14.6
Pulling hair	12	13.5
Forcing the child to kneel/stand in one spot with added burden	2	2.2
Any severe physical punishment**	9	10.1
Choking by putting hand/something else around neck	4	4.5
Shaking (if age ≤ 2 years)	3	3.4
Kicking	2	2.2
Beating (hitting over and over again with object or fist)	2	2.2
Smothering with hand/pillow	0	0.0
Burning/scalding/branding	0	0.0
Threatening with a knife or gun	0	0.0

* At least one of the 10 items bellow
** At least one of the seven items bellow
[#] Stick, broom, cane or belt

Table 2 – Frequency of factors potentially associated with child severe physical punishment according to three domains. Data from Jardim Santa Emília, Embu (SP), 1999 (n = 89)

Associated factors	N	%
Child domain		
Age		
0-10 years	60	67.4
11-17 years	29	32.6
Gender		
Female	37	41.6
Male	52	58.4
Chronic physical health problems	9	10.1
Mental health problems (CBCL Total behavior problem scale)*		
Clinical cases	15	22.4
Borderline cases	8	11.9
Mother domain		
Never went to school or did not complete second grade	41	46.1
Not working for pay	45	50.6
Physical health problems	11	12.4
Mental health problems (SRQ ≥ 7)	40	44.9
Childhood experience of harsh physical punishment	39	43.8
Victim of lifetime severe physical marital violence	17	19.1
Husband/partner domain		
Not working for pay**	18	23.4
Drunk (1or more times in the past 12 months)***	26	33.8

* n = 67 (sub-sample aged 4-17 years)
** n = 75 (husband/partner present in 77 households, 2 missing)
*** n = 77

Table 3 – Logistic regression models showing odds ratios and 95% confidence intervals [OR (95%CI)] for three groups of factors potentially associated with child severe physical punishment according to child#, mother##, and mother's husband/partner domains. Data from Jardim Santa Emília, Embu (SP), 1999

Associated factors	Child model A (n = 89)		Child model B (n = 67)		Mother model A (n = 89)		Mother model B (n = 89)		Husband/partner (n = 75)	
	Initial model	Reduced model	Initial model	Reduced model	Initial model	Reduced model	Initial model	Reduced model	Initial model	Reduced model
(1) Age	2.8[a] (0.7-11.6)	2.9[a] (0.7-11.8)	8.3[a] (0.8-85.8)	6.0[a] (0.6-58.6)						
(2) Gender	[b]	EX	[b]	EX						
(3) Physical health problems	[b]	EX	[b]	EX	[b]	EX	COL	EX		
(4) Mental health problems	NA	NA	9.5* (1.4-66.4)	7.3* (1.1-47.8)	COL	EX	[b]	EX		
(5) Education					[b]	EX	[b]	EX		
(6) Unemployment					0.3[a] (0.05-1.4)	0.3[a] (0.05-1.5)	0.3[a] (0.05-1.4)	0.3[a] (0.05-1.5)	[b]	EX
(7) Harsh physical punishment in childhood					5.3[a] (1.0-29.2)	4.8[a] (0.9-24.8)	5.3[a] (1.0-29.0)	4.8[a] (0.9-24.8)		
(8) Lifetime severe physical marital violence					[b]	EX	[b]	EX		
(9) Getting drunk									[b]	EX

Model A (including factors 1, 2 and 3) was elaborated for the entire sample, and model B (including factors 1, 2, 3 and 4) for the sub-sample aged 4-17 years using variables from the child domain; ## Due to colinearity between mother physical health problems and mental health problems, models A (including factors 3, 5, 6, 7 and 8) and B (including factors 4, 5, 6, 7 and 8) were elaborated for the mother domain.
[a] p < 0.20; [b] p ≥ 0.20; * p < 0.05
NA: variable not available for children under four years of age (not included in child model A)
EX: variable excluded from the reduced model due to p ≥ 0.20
COL: variable excluded from the model due to colinearity
(1) 0-10 years vs. 11-17 years; (2) male vs. female; (3) yes vs. no; (4) yes vs. no; (5) no schooling or one year of schooling vs. two or more years of schooling; (6) not working for pay vs. working for pay; (7) yes vs. no; (8) kicking, hitting, beating or use of /threaten to use weapon vs. none; (9) drunk at least once in the past 12 months vs. no drunkenness.

of interest. In addition, it is important to note that the cut-off point used in this study to determine clinical and borderline ranges of CBCL T-scores was established according to American normative data since there is no Brazilian normative data available. Nevertheless, this potential problem is minimized by the adequate sensibility of the instrument when compared to the "gold standard" psychiatric diagnosis based on ICD-10 and DSM-IV criteria. Finally, maternal experience of harsh physical punishment in childhood was registered based on the mother's perception of victimization in childhood, which may sound vague. Because a pre-established list of specific forms of physical aggression would not include all possibilities of physical violence suffered, WorldSAFE experts preferred to leave it as a "yes-or-no" question type. However, when improving the instrument to be used in the full study, an open question was added asking mothers to describe the most severe form of harsh physical punishment suffered in childhood to identify misunderstandings (e.g. non-physical forms of violence or non-severe physical aggression).

Within the studied community, characterized by poverty and high rates of homicide among teenagers and young adults, severe physical punishment of children by mother or mother's husband/partner was a frequent event. The low socioeconomic status (SES) of the great majority of our sample may in part explain the high rates of child severe physical punishment since SES is commonly cited as a risk factor for the perpetration of child physical abuse.[1,29] Wolfner & Gelles investigated mild and severe physical violence against children in families with at least one child under the age of 18 years (n = 3,232).[30] The mild violence index included items such as: pushing, grabbing, slapping, or spanking. The severe violence index included items such as: kicking, hitting, beating up, among others. The authors

Table 4 – Final logistic regression models showing odds ratios and 95% confidence intervals [OR (95%CI)] for previously selected associated factors (p < 0.20) concerning the entire sample and a sub-sample of children aged 4-17 years. Data from Jardim Santa Emília, Embu (SP), 1999

Selected associated factors	Entire sample: 0-17 years (n = 89)		Sub-sample: 4-17 years (n = 67)	
	Initial model	Reduced model	Initial model	Reduced model
(1) Child age	[b]	EX 1	[b]	EX1
(2) Child mental health problems	NA	NA	[b]	9.1* (1.5-56.0)
(3) Mother unemployment	0.3[a] (0.05-1.5)	EX2	[b]	EX2
(4) Mother harsh physical punishment in childhood	4.8[a] (0.9-25.3)	5.3** (1.03-26.9)	[b]	EX3

[a] p < 0.20; [b] p ≥ 0.20; * p = 0.017; ** p = 0.047
EX1: variable excluded from the reduced model due to p ≥ 0.20
EX2: variable excluded from the reduced model due to p ≥ 0.10 & p < 0.20
EX3: variable excluded from the reduced model do to p = 0,09
NA: variable not available for children under four years of age
(1) 0-10 years vs. 11-17 years; (2) clinical vs. borderline/non-clinical; (3) not working for pay vs. working for pay; (4) yes vs. no.

noted that family income was associated with the perpetration of severe violence, but was not associated with perpetration of mild physical aggression. Large studies involving American nationally representative samples examined the effect of SES on perpetration of child physical abuse. Straus found that parents reporting minor abuse (n = 268) had lower SES factor scores (parental education, occupational prestige and family income) than parents that did not report it (n = 2,074; r = -0.11).[31] However, data from the Epidemiological Catchment Area (ECA) study[32] did not reveal any association between SES and severe physical abuse. In the ECA study, 7,103 parents were asked about serious physical abuse of children resulting in bruises, bed days or medical care, and only 0.9% of them gave positive answers. However, parents may have hidden abusive behaviors afraid of reports to local authorities.

In our study, child mental health problems remained associated with severe physical punishment of children in the family environment after controlling for the presence of different potential correlates. In fact, the literature shows that abused children exhibit more behavior problems compared to non-abused children. Five studies[33-37] investigated total behavioral problems in abused children by administering an older version of the Child Behavior Checklist[38] to abusive parents. Overall, abusive parents rated their children as having more internalizing (r = 0.34-0.60) and externalizing problems (r = 0.55-0.74) than non-abused community children. However, it must be taken into consideration that not only the child's aggressive behavior may stimulate parental use of more strict educational methods, but also parental inadequate behaviors may influence the development of child mental health problems. Therefore, child behavior problems may be cause or consequence of physical abuse, deserving more attention of future longitudinal studies.

More recent Brazilian studies have shown statistically significant associations between intrafamilial physical violence and child mental health problems. In a cross-sectional survey[29] three contrasting neighborhoods were selected from a single district in southeastern Brazil: a shantytown, a stable urban community, and a rural village. Parent, teacher, and self-report versions of the Strengths and Difficulties Questionnaire identified schoolchildren (n = 898, 7-14 years) with probable psychiatric disorders. Poverty, maternal mental health problems, marital violence and child exposure to harsh discipline by parents/caretakers were all strongly associated with higher rates of probable psychiatric disorders. In a cross-sectional study[5] conducted with a stratified probabilistic sample of first to third-graders from public and private schools in southeastern Brazil (n = 454, 7-11 years), the act of hitting the child with a belt was associated to conduct problems and to overall mental health problems among schoolchildren in the presence of other risk factors (child male gender, parents/caretakers with mental health problems, and adverse socioeconomic conditions).

In the present study, maternal childhood experience of harsh physical punishment also remained associated with child severe physical punishment in the presence of other potential correlates. Our findings are in accordance to the results from American national representative studies that suggest that being physically punished by either parent in childhood is associated with increased risk for perpetrating child physical abuse.[39-40] In a population-based sample including 1,966 mothers and 1,267 fathers, Straus & Smith noted that parents who were physically punished by their father and/or mother had higher rates of perpetrating child physical abuse than did parents who had not been physically punished by their own parents.[39] When evaluating 3,363 families with at least one child living in the household, Ross found that the odds that a mother will physically abuse her child was 2.6 times higher for mothers who had received corporal punishment as teenagers than for mothers who had not. Similar data were obtained for fathers (OR = 1.8).[40]

Conclusions

Severe physical punishment of children and adolescents by mother and/or mother's husband or partner is frequent in the studied community. Child mental health problems and mother childhood experience of harsh physical punishment are both correlates of severe physical violence against children and adolescents in the family environment. Therefore, when intrafamilial violence occurs, child/adolescent mental health may be compromised. Despite the impossibility of establishing sequence in time when examining child mental health problems and maltreatment in a cross-sectional study, child mental health status must be addressed when dealing with intrafamilial violence. In addition, another impact of suffering physical abuse in childhood to be considered is the increased risk of victims becoming perpetrators in the next generation. Study results indicate the urgent need of larger population-based studies to identify factors associated with intrafamilial violence against children and adolescents in different regions of Brazil. It could help the development of intervention models sensitive to local community characteristics.

This pilot study confirmed the feasibility of sampling strategies and procedures adopted for data collection, authorizing the authors to conduct the full study in a similar neighborhood of the same municipality. The pilot phase experience resulted in the improvement of the study's instrument. Site-specific items were added to the Brazilian version of the WorldSAFE Core Questionnaire in order to obtain more detailed information on selected topics of interest.

References

1. Krug EG, Dahlberg LL, Mercy JA, Zwi AB, Lozano R, editors. Child abuse and neglect by parents and other caregivers. *World report on violence and health*. Geneva: World Health Organization; 2002. p. 59-86.
2. Pan American Health Organization (PAHO) team on violence and injury prevention. Child and youth health: action, research and advocacy. Panel discussion of the 8th Canadian Conference on International Health. Ottawa, Canada; 2001. [cited 15 Jan 2006] Available at: http://www.paho.org/English/AD/DPC/NC/child-abuse-lac.htm
3. Assis SG, Avanci JQ, Santos NC, Malaquias JV, Oliveira RV. Violência e representação social na adolescência no Brasil [Violence and social representation in teenagers in Brazil]. *Rev Panam Salud Publica*. 2004;16(1):43-51.

4. Weber LN, Viezzer AP, Brandenburg OJ. O uso de palmadas e surras como prática educativa [The use of spanking and physical punishment in parenting]. *Estud psicol* (Natal). 2004;9(2):227-37.

5. Vitolo YL, Fleitlich-Bilyk B, Goodman R, Bordin IA. Crenças e atitudes educativas dos pais e problemas de saúde mental em escolares [Parental beliefs and child-rearing attitudes and mental health problems among schoolchildren]. *Rev Saude Publica*. 2005;39(5):716-24.

6. Davoli A, Palhares FA, Correa-Filho HR, Dias AL, Antunes AB, Serpa JF, Schincariol P. Prevalência de violência física relatada contra crianças em uma população de ambulatório pediátrico [Prevalence of reported child abuse by parents in a pediatric out-patient population]. *Cad Saude Publica*. 1994;10(1):92-8.

7. Moura AT, Reichenheim ME. Estamos realmente detectando violência familiar contra a criança em serviços de saúde? A experiência de um serviço público do Rio de Janeiro, Brasil [Are we really detecting violence in families of children visiting our health services? The experience of a public health service in Rio de Janeiro, Brazil]. *Cad Saude Publica*. 2005;21(4):1124-33.

8. Brasil. Senado Federal. Lei no 8.069/90, 13 de Julho de 1990. Estatuto da Criança e do Adolescente (ECA). Brasília (DF); 1990.

9. Deslandes SF. Prevenir a violência: um desafio para profissionais de saúde. Brasília: Fundação Oswaldo Cruz; 1994. p. 39.

10. Deslandes SF. Atenção a crianças e adolescentes vítimas de violência doméstica: análise de um serviço. *Cad Saude Publica*. 1994;10(Suppl 1):177-87.

11. Cariola TC. A posição da criança vítima de maus-tratos na constelação familiar. *Pediatr Mod*. 1995;31(2):158-62.

12. Flores IP, Calcagnotto CH, Pires FA, Borghetti KM, Zorzi LC, Cenatti LD, Schimidt VH. A criança maltratada: avaliação de um ano no Conselho Tutelar de Caxias do Sul. *Rev Cient AMECS*. 1996;5(2):135-9.

13. Cunha JM. Atendimento a crianças e adolescentes vítimas de violência doméstica: impasses, desafios e alternativas. *Texto Contexto Enferm*. 1999;8(2):360-3.

14. Cavalcanti ML. Estudo descritivo dos registros de violência doméstica no Conselho Tutelar de Niterói. *Cad Saude Colet* (Rio J). 1999;7(1):99-123.

15. Gonçalves HS, Ferreira AL, Marques MJ. Avaliação de serviço de atenção a crianças vítimas de violência doméstica [Evaluating a support program for children victim of domestic violence]. *Rev Saude Publica*. 1999;33(6):547-53.

16. Brito AM, Zanetta DM, Mendonça RC, Barison SZ, Andrade VA. Violência doméstica contra crianças e adolescentes: estudo de um programa de intervenção [Domestic violence against children and adolescents: a supporting program study]. *Cienc Saude Coletiva*. 2005;10(1):143-9.

17. Kaplan SJ, Pelcovitz D, Salzinger S, Weiner M, Mandel FS, Lesser ML, Labruna VE. Adolescent physical abuse: risk for adolescent psychiatric disorders. *Am J Psychiatry*. 1998;155(7):954-9.

18. Lansford JE, Dodge KA, Pettit GS, Bates JE, Crozier J, Kaplow J. A 12-year prospective study of the long-term effects of early child physical maltreatment on psychological, behavioral, and academic problems in adolescence. *Arch Pediatr Adolesc Med*. 2002;156(8):824-30.

19. Meneghel SN, Giugliani EJ, Falceto O. Relações entre violência doméstica e agressividade na adolescência [The relationship between family violence and teenage aggressiveness]. *Cad Saude Publica*. 1998;14(2):327-35.

20. Sadowski LS, Hunter WM, Bangdiwala SI, Munoz SR. The World Studies of Abuse in the Family Environment (WorldSAFE): a model of a multi-national study of family violence. *Inj Control Saf Promot*. 2004;11(2):81-90.

21. Fundação Sistema Estadual de Análise de Dados (SEADE). Population by municipality in 2005. [cited on March 10, 2006]. Available at: http://www.seade.gov.br/produtos/imp/index.php

22. Straus MA, Hamby SL, Finkelhor D, Moore DW, Runyan D. Identification of child maltreatment with the Parent–Child Conflict Tactics Scales: development and psychometric data for a national sample of American parents. *Child Abuse Negl*. 1998;22(4):249-70. Erratum in: *Child Abuse Negl*. 1998;22(11):1177.

23. Achenbach TM. Manual for the Child Behavior Checklist/4-18 and 1991 Profile. Burlington, VT: University of Vermont, Department of Psychiatry; 1991.

24. Bordin IA, Mari JJ, Caeiro MF. Validação da versão brasileira do Child Behavior Checklist (CBCL) (Inventário de Comportamentos da Infância e Adolescência): dados preliminares. *Rev ABP/APAL*. 1995;17(2): 55-66.

25. Brasil HH. Desenvolvimento da versão brasileira da K-SADS-PL (*Schedule for Affective Disorders and Schizophrenia for School Aged Children Present and Lifetime Version*) e estudo de suas propriedades psicométricas [tese]. São Paulo: Universidade Federal de São Paulo. Escola Paulista de Medicina; 2003.

26. World Health Organization (WHO). A user's guide to the Self Report Questionnaire (SRQ). Geneva: Division of Mental Health, World Health Organization; 1994.

27. Iacoponi E, Mari JJ. Reliability and factor structure of the Portuguese version of Self-Reporting Questionnaire. *Int J Soc Psychiatry*. 1989;35(3):213-22.

28. Mari JJ, Williams P. A comparison of the validity of two psychiatric screening questionnaires (GHQ-12 and SRQ-20) in Brazil, using Relative Operating Characteristic (ROC) analysis. *Psychol Med*. 1985;15(3):651-9.

29. Fleitlich B, Goodman R. Social factors associated with child mental health problems in Brazil: cross sectional survey. *BMJ*. 2001;323(7313):599-600.

30. Wolfner GD, Gelles RJ. A profile of violence toward children: a national study. *Child Abuse Negl*. 1993;17(2):197-212.

31. Straus MA. Beating the devil out of them: corporal punishment in American families. New York: Lexington Books; 1994.

32. Chaffin M, Kelleher K, Hollenberg J. Onset of physical abuse and neglect: psychiatric, substance abuse, and social risk factors from prospective community data. *Child Abuse Negl*. 1996;20(3):191-203.

33. During SM, McMahon RJ. Recognition of emotional facial expressions by abusive mothers and their children. *J Clin Child Psychol*. 1991;20:132-9.

34. Jaffe P, Wolfe D, Wilson S, Zak L. Similarities in behavioral and social maladjustment among child victims and witnesses to family violence. *Am J Orthopsychiatry*. 1986;56(1):142-6.

35. Mash EJ, Johnston C, Kovitz K. A comparison of the mother-child interactions of physically abused and non-abused children during play and task situations. *J Clin Child Psychol*. 1983;12:337-46.

36. Whipple EE, Webster-Stratton C. The role of parental stress in physically abusive families. *Child Abuse Negl*. 1991;15(3):279-91.

37. Wolfe DA, Mosk MD. Behavioral comparisons of children from abusive and distressed families. *J Consult Clin Psychol*. 1983;51(5):702-8.

38. Achenbach TM, Edelbrock C. Manual for the Child Behavior Checklist and revised child behavior profile. Burlington, VT: Queen City Printers; 1983.

39. Straus MA, Smith C. Family patterns and child abuse. In: Straus MA, Gelles RJ, editors. *Physical violence in American families: risk factors and adaptations to violence in 8145 families*. New Jersey: Transaction Publishers; 1992.

40. Ross SM. Risk of physical abuse to children of spouse abusing parents. *Child Abuse Negl*. 1996;20(7):589-98.