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A longitudinal study of the effects of chronic maltreatment on children's behavioral and emotional problems[☆]

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Abstract

Objective: The aim of the present longitudinal study was to examine the links between chronicity of maltreatment and child behavioral and emotional problems.

Method: Forty-nine maltreated children (32 victims of continuous, or chronic, maltreatment; 17 victims of transitory maltreatment) and their mothers were evaluated in their homes three times over a period of 6 years: at the time of recruitment (T1), 3 years following the initial evaluation (T2) and 6 years following the initial evaluation (T3). The home visits were designed to obtain longitudinal assessments of different types of behavioral and emotional problems in the children, and of the mothers' self-reported potential for abuse to help determine the chronic/transitory aspect of the maltreatment situation. Child Protection Services (CPS) files were also consulted at each assessment time in order to obtain more accurate information regarding the chronic/transitory aspect of the maltreatment situation.

Results: The results show that over time the victims of chronic maltreatment (Chronic group; CH) had significantly more emotional problems (i.e., Anxiety/Depression) than those victims of transitory maltreatment (Transitory group; TR). There was also a tendency for CH children to exhibit more aggressive behavior and social withdrawal problems than the children in the TR group. Furthermore, at T3, the proportion of children in the CH group showing a clinical level of behavior problems in general was significantly higher than in the TR group.

Conclusions: The study confirms that there are differences among maltreated children in levels of behavior and emotional problems and shows that chronicity must be taken into consideration in order to identify more clearly the impact of maltreatment on the child. Chronically maltreated children appear to be at high-risk for developing clinical levels of problems. The results also suggest that intervention efforts resulting in an improvement of the

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family situation (i.e., reduction or elimination of maltreatment), also lead to an improvement in the behavior of children.

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Introduction

A number of studies have been conducted over the past few years in the field of child maltreatment with the objective of better understanding the relationships between childhood abuse and/or neglect and the presence of various behavioral and emotional problems. On the whole, the results of these studies present quite compelling evidence that maltreated children are likely to display major behavior problems and marked emotional difficulties (Crouch & Milner, 1993; Egeland, Yates, Appleyard, & van Dulmen, 2002; Trickett & McBride-Chang, 1995), and certainly in a much greater proportion than children in normative populations (Jungmeen & Cicchetti, 2003; Lamphear, 1985; Maughan & Cicchetti, 2001). When child victims of abuse and neglect are compared with non-maltreated children, the results obtained using a number of instruments show almost systematically that the maltreated children have a greater degree of behavioral and emotional problems. Maltreated children display significantly more externalizing and internalizing behavior problems (de Paul & Arruabarrena, 1995; Erickson, Egeland, & Pianta, 1989; Shonk & Cicchetti, 2001; Wodarski, Kurtz, Gaudin, & Howing, 1990), more discipline problems at school (Kendall-Tackett & Eckenrode, 1996), and more symptoms of depression (Cerezo and Frias, 1994 Cerezo & Frias, 1994; Toth, Manly, & Cicchetti, 1992). Furthermore, they are more aggressive towards their peers or more socially withdrawn (Hoffman-Plotkin & Twentyman, 1984; Prino & Peyrot, 1994; Shields & Cicchetti, 2001), have fewer social skills (Levendosky, Okun, & Parker, 1995; Rogosch & Cicchetti, 1994) and are more likely to be rejected by their peers or be victims of their aggressivity (Rogosch & Cicchetti, 1994; Shields & Cicchetti, 2001). In addition, work by Shields and Cicchetti (2001) revealed that maltreated children have more problems with the regulation of emotions than non-maltreated children.

Development of behavioral problems in maltreated children

Although the many studies that have examined behavior problems in maltreated children have shown a link between experience of abuse and neglect and the presence of behavioral and emotional problems, very little research has focused on the developmental aspects of this relation (Trickett & McBride-Chang, 1995). As a result, many questions have not been clearly answered concerning the relation between dimensions or characteristics of maltreatment, such as the age of the children at the time of the abuse, and the development of behavioral and emotional problems over time. To date, very few longitudinal studies have focused on finding answers to such questions (Trickett & McBride-Chang, 1995) and yet according to Cicchetti (1994; cited in Bolger, Patterson, & Kupersmidt, 1998, p. 1175), “research that charts the sequelae of abuse and neglect across childhood is crucial to a better understanding of the effects of maltreatment on child development.”

In one such longitudinal study, Cicchetti and Rogosch (1997) examined the level of adaptation of school-aged maltreated and non-maltreated children who were evaluated yearly over a period of 3 consecutive years; these authors found that a greater percentage of maltreated children consistently showed a

low level of adaptation at all three assessments. Over the 3-year period, the maltreated children exhibited more externalizing and internalizing behavior problems, less prosocial behavior, more symptoms of depression, and more withdrawal behavior than the non-maltreated children, suggesting a continuity in the difficulties experienced by the children who had been abused and neglected. Another 1 year longitudinal study by Lynch and Cicchetti (1998) on the links between child maltreatment, community violence and children's symptomatology also revealed that maltreated children showed more externalizing and internalizing behavior problems than their non-maltreated counterparts. These two studies, therefore, support the findings of cross-sectional studies, that is, maltreated children show significantly more behavioral and emotional problems than non-maltreated children. Moreover, the studies show that the links between maltreatment and these problems appear to last over time, or at least over a certain period of time.

Chronicity of maltreatment

One of the dimensions of maltreatment that has received little attention, but is essential to the understanding of the impact of maltreatment on the development of behavioral and emotional problems is chronicity. The importance of defining chronicity is clear as a significant proportion of cases of abuse and neglect are long lasting (Cicchetti & Barnett, 1991). Furthermore, an exploration of chronicity leads to a better understanding of the cumulative effects of chronic stressors on child development (Shaw, Vondra, Hommerding, & Keenan, 1994).

Chronicity is generally defined as a persisting situation of abuse and neglect. This implies that the abuse inflicted on the child takes place over a relatively long period of time. Despite sustained intervention by child protective services, families where maltreatment is a chronic problem require continuous follow-ups. In contrast, some maltreating families respond to child protective interventions by significantly improving the situation such that the health and safety of the child is no longer jeopardized. These cases are often referred to as transitory maltreatment. A comparison of children in situations of persisting maltreatment and those where the situation of neglect and abuse has improved considerably would shed more light on the impact of maltreatment on child behavioral and emotional outcome.

Among the few studies that have examined the chronic dimension of maltreatment (Bolger & Patterson, 2001; Bolger et al., 1998; Manly, Cicchetti, & Barnett, 1994), one found a direct link between chronicity and behavior problems (Manly et al., 1994). The social skills and behavior problems of 235 underprivileged children aged 5 and 11 years old (145 maltreated and 90 non-maltreated) were assessed while attending a summer camp program. Chronicity was measured according to the total number of months during which the family of the child had received child protection services; the greater the number of months of intervention, the more the situation was deemed chronic. The findings showed that after controlling for the presence and absence of maltreatment, chronicity was linked to problems of aggressive behavior as evaluated by the children's peers. The longer the maltreatment of a child had persisted, as suggested by the length of intervention, the more likely it was for peers to view the child as being aggressive and instigators of conflict.

Two other longitudinal studies carried out recently by Bolger and coworkers (Bolger & Patterson, 2001; Bolger et al., 1998) are relevant to an examination of the links between the chronic dimension of maltreatment and child behavioral and emotional outcome. In their first study, Bolger et al. (1998) found a relationship between various dimensions of maltreatment, including chronicity, and the quality of child peer relationships and self-esteem. Their sample was made up of 214 school-aged children (107 maltreated and 107 non-maltreated) who were assessed over 5 consecutive years. Chronicity was

determined based on each child's CPS file: the beginning of maltreatment and the moment it ceased were determined with as much accuracy as possible and the span of time between the two was the measure of chronicity. In their studies, chronicity ranged from 1 to 14 years. The results of their first study showed that chronicity predicted the level of a child's popularity among peers, no matter what type of abuse was involved or the level of severity of the abuse. Chronicity was also associated with problems of self-esteem. In a second study using the same sample of children, Bolger and Patterson (2001) found a link between the various dimensions of maltreatment, including chronicity, and aggressive behaviors, rejection by peers and social withdrawal. The results of the second study revealed that chronicity of maltreatment was associated with a greater risk of rejection by peers and this held true repeatedly over a number of years, from childhood to mid-adolescence. Chronicity was also associated with higher levels of aggressive behavior, whether reported by peers, teachers, or the children themselves (results which support the findings of Manly et al., 1994). The authors state that these links appear to be already well established by school age and continue to be a factor at least until the beginning of adolescence, thus suggesting continuity in the relations between maltreatment and the presence of behavioral and emotional problems.

However, because in the studies discussed above the authors did not concomitantly and repeatedly assess both the maltreatment situation and the children's problems, their results do not shed light on what happens with the problems of maltreated children once maltreatment ceases or diminishes. This leaves several pertinent questions unanswered, such as: "When maltreatment ceases, or at least diminishes, do child behavior problems decrease or disappear?" Only studies that use a longitudinal and prospective approach in their examination of both child maltreatment and the presence of behavioral and emotional problems will be able to provide answers to that type of question.

Another limitation of these studies is the way chronicity is defined, usually by the number of months (or years) over which a family receives services (Manly et al., 1994). This can only be an approximation of the actual duration of maltreatment, since services may cease for administrative reasons (or other reasons) and the maltreatment may well continue. In spite of their limitations, these studies do underline the importance of considering the chronic aspect of maltreatment when examining behavior problems in maltreated children.

In any discussion of the concept of chronicity of maltreatment, it is crucial to differentiate between the duration of services provided by child protection agencies and the *actual situation* of the maltreated children. We, therefore, believe that in addition to the number of months or years of CPS intervention other criteria must be included in order to arrive at a definition of chronicity. For that reason, in the present study we have included the level of potential abuse by the mother as an additional criterion. Since all of the children in the current sample were maltreated at the start of the study and all mothers were at least one of the perpetrators in the alleged reports of maltreatment, we believe that the use of this measure, in addition to the information contained in the CPS files, could result in a more precise assessment of chronicity. The fact that we used a longitudinal and prospective (as opposed to retrospective) research strategy, in which both the maltreatment situation and the children's behavior problems were assessed on a number of occasions, should serve to overcome some of the limitations of past studies and more accurately identify the nature of the links between chronic maltreatment and behavioral outcome.

The present study was designed to explore the relationship between maltreatment and child behavior problems across childhood. Its main originality, in addition to the new method of measuring chronicity, lies in the fact that it compares two groups of maltreated children. Our objective was to

answer the following questions: (1) Do chronically maltreated children display greater behavior problems than children in family situations that involve transitory maltreatment? (2) Are there differences in the type of problems displayed (externalizing problems, internalizing problems, etc.) by the children, depending on which group they are in? (3) Do the children's problems increase or decrease over time, depending on which group they are in? (4) Are chronically maltreated children more likely to display a clinical level of behavior problems than children in maltreatment situations characterized as transitory?

More specifically, we put forward the following hypotheses: (1) Chronically maltreated children will exhibit more behavior problems than children whose maltreatment was transitory; (2) The children in both groups will display the same types of problem; only the degree of the problems will differ; (3) The level of behavior problems will decrease for the children in the Transitory group and remain stable or increase for those in the Chronic group; (4) The chronically maltreated children will be more likely to display a clinical level of behavior problems compared to their peers living in situations that involve transitory maltreatment.

Method

Participants

A sub-sample of 49 maltreated preschoolers and school-aged children and their mothers who completed all three evaluations were selected from a larger sample (93 maltreating families). The participants in this larger sample were initially evaluated as part of a broader longitudinal study on the impact of an intervention program called the Personal, Family and Community Help Program (PFCHP; Éthier, Couture, Lacharité, & Gagnier, 1995). The PFCHP, developed from an ecological framework, is a program that addresses multiple dimensions of child neglect (see Éthier, Couture, Lacharité, & Gagnier, 2000, for a more complete description of the PFCHP). Twenty-six families did not complete T2, T3 or both of these assessments, either because they had moved away or they did not want to participate in the study anymore. Eighteen families had missing data on one or more of the measures used in this specific study at any time point and were therefore excluded. Previous analyses showed that there were no significant differences between the families who failed to complete the study (the attrition cases) and those who completed the study (see Éthier, Couture, & Lacharité, 2004, for details).

Participants were recruited over a period of 6 months through the Child Protection Services (CPS). All children and mothers were Caucasian and French-speaking. At the time of recruitment, the children's were all victims of severe neglect (both physical and emotional) according to the CPS files and their results on the Child Well-Being scales (Magura & Moses, 1984). Twenty-five of these children were also physically abused. Most of the families had multiple children in the home. When this was the case, the most problematic child from the family according to the CBCL's Total Problems scale at T1 was the one selected for the study.

The sample consisted of 29 boys, 20 girls, and their mothers. At the time of recruitment the children's mean age was 50.6 months ($SD = 19.15$) and the mothers' mean age was 29.35 years ($SD = 5.67$). The mothers had a mean of 9.65 years of education ($SD = 1.92$). Twenty-eight of the mothers lived alone with their children, and 28 of them were financially dependent on social assistance payments. Finally, 37 of the families had an annual income lower than \$ 20,000 (Canadian).

Measures

Demographic questionnaire. A brief questionnaire was developed and used to gather information regarding the composition of the families and the characteristics of their members: children's age and gender, mother's age, mother's education, family income, mothers' employment status, number of children in the family, and type of family (single-parent vs. dual-parent families).

Child Abuse Potential Inventory—CAPI (Milner, 1986). The CAPI is often used in research on maltreated children. It consists of 160 statements to which respondents (in our case mothers) must indicate their agreement or disagreement. A weighted compilation of the responses yields an overall potential abuse score. According to norms defined by the author of the instrument, the 95th percentile rank is the critical cutoff point, beyond which the parent shows a high child abuse risk. This corresponds to a score of 166 or over. The CAPI has excellent psychometric properties (Milner, 1994). Several studies have demonstrated that the CAPI has both adequate concurrent and predictive validity (see Milner, 1986, for a review). Milner's review shows that the CAPI is effective in discriminating groups of abusers and mixed groups of abusive and neglectful parents. Most importantly, a longitudinal study by Milner, Gold, Ayoub, and Jacewitz (1984) shows a significant positive relationship between high CAPI abuse scores for a group of at-risk subjects and subsequent confirmed physical abuse, as well as a significant positive relationship between high abuse scores and later neglect. Milner (1994) points out that although the CAPI was not specifically designed to detect child neglect, high abuse scores seem to be related somehow to later child neglect.

Child Behavior Checklist—CBCL (Achenbach, 1991, 1992). The CBCL is frequently used for both research and clinical purposes and is designed to describe child behavioral and emotional problems. It has good psychometric properties both in its validity and its reliability. For the purposes of the present study, two forms of the CBCL were used: the first was designed for children 2–3 years old and the second for children aged 4 to 18. The parent must respond on a scale of 0 to 2, where 0 corresponds to "not true or never," 1 to "somewhat or sometimes true," and 2 to "very true or often true." The CBCL 2–3 contains 100 items, whereas the CBCL 4–18 is made up of 118 items. Scores on each item are summed to provide a total score of problem behaviors. Raw scores can then be converted into *T* scores that take into account the age and gender of the child. The use of the standardized *T* scores allows the comparison of the age-appropriate versions of the instrument (Dukewich, Borkowski, & Whitman, 1999).

In addition to a total problem score (Total Problems scale), several subscales are available from the CBCL. The two forms used in this study have four subscales in common: Anxious/Depressed, Withdrawn, Aggressive Behavior and Somatic Complaints. The various forms of the CBCL have often been used in maltreatment studies. In our study, 19 mothers completed the CBCL 2–3 at T1. Twelve mothers completed the same version at T2. All mothers completed the CBCL 4–18 at T3.

Procedure

At program enrolment, participants were solicited by CPS clinicians to participate voluntarily in the study, which was approved by both the ethical committee of the university and the director of the research division of the CPS. Participants then completed a written informed consent form. Children and their mothers were evaluated on three occasions: at the time of recruitment (T1), at the end of the intervention program, that is, about 3 years later (T2), and finally at the follow-up about 6 years after recruitment (T3).

At T1, the mothers filled out the Demographic Questionnaire. At each assessment time (T1–T2–T3), the mothers filled out the CAPI and the age-appropriate CBCL. In addition, at each evaluation information was gathered concerning the status of CPS services provided to the child's family. The evaluations took place in the participants' homes, with the rare exception of cases where confidentiality of the information provided was an issue because of the presence of other persons in the home, in which cases the mother was interviewed at the university lab. Graduate students who had received previous training carried out these assessments. The questionnaires were administered in the form of an interview because some of the mothers had trouble reading the forms.

Classification of cases—chronic versus transitory

In order to categorize the children according to whether or not they were chronically maltreated, we used two criteria that took into account how the children's maltreatment situation had evolved from T1 to T3. Mothers whose CPS files were still active at the time of the follow-up (T3) and/or who still showed a high child abuse potential on the CAPI at T3 (a score of 166 or more on the abuse scale, which corresponds to the 95th percentile rank according to norms) were categorized as having chronic problems and their children were therefore placed in the chronically maltreated group. The other mothers, whose CPS files had been closed *and* who showed an abuse potential below 166 on the CAPI abuse scale (*below* the 95th percentile), were considered as having transitory problems, and their children were therefore put into the group of children whose maltreatment situation was transitory. The use of a double criterion (the clinical judgment of the child protection worker and the mother's self-reported potential for abuse) might make it possible to arrive at a more accurate assessment of chronicity, since continuity of CPS services varies for administrative or other reasons (e.g., the availability of internal and external resources). Using the CAPI enabled us to better control that fact and therefore probably helped to reduce the number of case categorization errors (see Éthier et al., 2004, for information concerning the accuracy of the classification). The Chronic group (CH) was made up of 32 children whose mothers still presented child maltreatment problems 6 years after recruitment. The Transitory group (TR) was composed of the 17 children of mothers whose maltreatment problems had significantly improved and who were therefore considered as having had transitory maltreatment problems. Preliminary analyses demonstrated that there were no significant differences between the CH and TR groups regarding the type of intervention received (PFCHP or the regular intervention of the CPS) (Éthier et al., 2004).

Figure 1 shows the mean abuse potential at T1, T2 and T3 for the mothers in the two groups. At T1, the mean for the mothers in the two groups was above the critical cutoff point (166), the difference between the two groups being marginal, but statistically non-significant ($F = 2.68$, $p = .10$). This shows that the mothers of both groups were not different at T1 on mean CAPI scores. It also diminishes the possibility that differences between the families with regard to prior CPS involvement to T1 influence the results of this study (we do not have the information about prior CPS involvement to T1 for all families, thus making it impossible to include this variable in our analyses).

Statistical analysis

Before proceeding with analyses aimed specifically at testing the research hypotheses, we first conducted preliminary comparative analyses of the socio-demographic characteristics of the families in both groups (CH and TR).

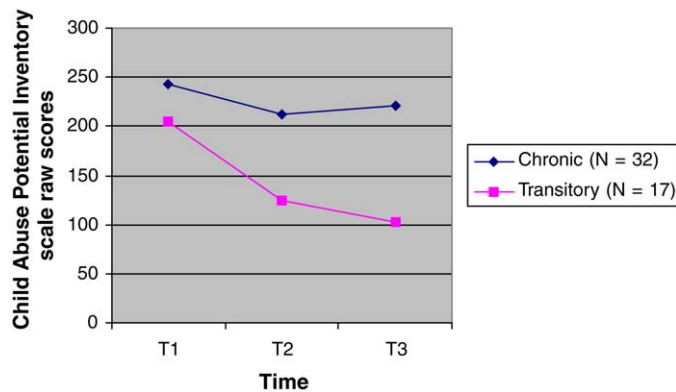


Figure 1. Mean scores on the Child Abuse Potential Inventory for the mothers in both groups (Chronic and Transitory) at T1, T2 and T3.

A 2×3 doubly multivariate Manova (Group \times Time) with repeated measures for Time (see, [Tabachnick & Fidell, 2001](#)), was used to determine differences in the four types of behavior problems of the children in the different groups at the different times. When a significant interaction was found between Group and Time, simple effects analyses were performed in order to identify the source of the interaction.

Finally, our last analysis was designed to determine if the children in the CH group were more likely to display a clinical range of behavior problems in comparison with the children in the TR group. The CBCL allows us to locate a cutoff point above which the level of child behavior problems can be considered as highly problematic. For the Total problems scale, this threshold corresponds to a T score of 63. However, according to [Achenbach \(1991\)](#), for both statistical purposes and categorical discrimination between deviant and non-deviant groups the T scores of 60 which normally define the borderline clinical range can serve as the bottom of the clinical range. Other researchers have recently used the T score of 60 as the clinical cutoff ([Black et al., 2002](#)). We therefore performed, using the T score of 60 as the clinical cutoff point, χ^2 analysis on the distribution of the children in the two groups (CH and TR) within the clinical range or the normal range of the CBCL for the Total Problems scale for each of the three assessment times. Because of the fact that several of the cells had frequencies less than 5, we did not perform χ^2 analyses on the CBCL subscales.

Results

Preliminary analyses

[Table 1](#) shows the comparison of socio-demographic variables between the mothers and children of the CH and the TR groups. The groups were not statistically different except for the type of family (single or dual-parent family). Since the type of family was not found to be correlated with children's behavior problems at each assessment time, we did not consider this variable further.

Table 1
Socio-demographic characteristics of the Chronic (CH) and Transitory (TR) groups at T1

	Chronic (<i>N</i> = 32)		Transitory (<i>N</i> = 17)		<i>p</i>
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	
Age of the child (months)	53.66	19.50	44.94	17.62	.13
Age of the mother (years)	29.47	6.28	29.12	4.46	.84
Education	9.47	1.85	10.0	2.06	.36
Number of children	2.5	1.44	1.88	.99	.09
	<i>N</i>	Percent	<i>N</i>	Percent	
Girls	13	65	7	35	.97
Boys	19	66	10	34	
Single-parent families	14	44	14	82	.01
Dual-parent families	18	56	3	18	
Employed	15	47	6	35	.44
Unemployed	17	53	11	65	
Family income (\$CAN)					
\$5,000–\$24,000	25	78	16	94	.15
\$25,000 or more	7	22	1	6	

Chronicity and behavior problems

Table 2 shows the means (and standard deviations) for the scores obtained by the children on the CBCL for the Total Problems scale and the four subscales (Withdrawn, Anxious/Depressed, Somatic Complaints, Aggressive Behavior) per group and per assessment time.

Table 2
Means and standard deviations for the scores obtained by the children on the five CBCL scales by group and assessment time

Scale/group	T1		T2		T3	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Total Problem						
Chronic	62.78	7.89	61.38	10.06	62.91	9.96
Transitory	62.47	10.11	59.59	7.56	55.53	7.74
Withdrawn						
Chronic	59.31	8.22	58.09	7.10	60.22	7.59
Transitory	58.94	8.82	55.88	6.09	53.88	5.27
Anxious/Depressed						
Chronic	56.16	6.53	56.31	6.23	59.44	8.77
Transitory	56.18	6.65	55.41	6.31	53.65	4.08
Aggressive Behavior						
Chronic	65.07	11.17	63.16	10.85	64.13	9.19
Transitory	65.82	12.71	62.24	7.08	57.00	6.01
Somatic Complaints						
Chronic	54.81	6.30	56.06	7.04	56.31	7.97
Transitory	56.94	5.53	53.41	5.25	55.24	5.89

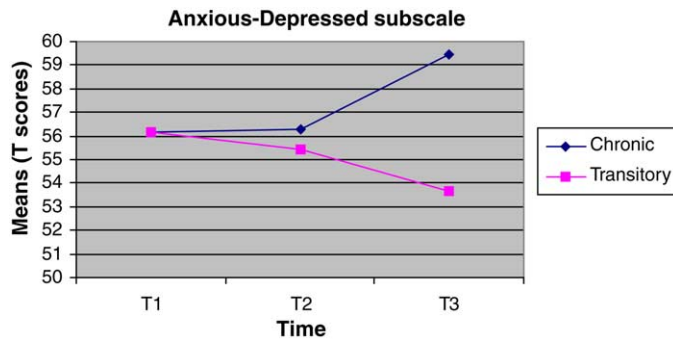


Figure 2. Group \times Time interaction—Anxious/Depressed subscale.

The results of the doubly multivariate MANOVA show a significant interaction effect of Group \times Time [$F(8, 0) = 2.34$; $p < .05$]. Univariate ANOVAs revealed a significant interaction effect in Anxiety/Depression problems [$F(2, 4) = 3.25$, $p < .05$]. This interaction is presented in Figure 2. Simple main effects tests yielded a significant increase in Anxiety/Depression problems for the children in the CH group, while the level of this type of problem slightly decreased for the children in the TR group. The interaction effects for Aggressive Behavior and Social Withdrawal problems were marginal but statistically non-significant, [$F(2, 4) = 2.85$, $p = .07$] and [$F(2, 4) = 2.32$, $p = .10$], respectively.

Chronicity and level of behavior problems

Table 3 shows the percentage of children situated in the clinical range of the CBCL for the Total Problems scale per group and assessment time, as well as the percentage of children situated in the

Table 3
Percentage of children situated in the clinical range of the CBCL, by group, scale, and assessment time

Scale/group ^a	T1 (%)	T2 (%)	T3 (%)
Total Problem			
Chronic	69	69	75
Transitory	53	53	29
Withdrawn			
Chronic	16	19	25
Transitory	24	6	6
Anxious/Depressed			
Chronic	9	6	19
Transitory	6	12	0
Aggressive Behavior			
Chronic	44	38	41
Transitory	41	24	6
Somatic Complaints			
Chronic	13	13	16
Transitory	12	0	6

^a At T1, T2 and T3, $N = 32$ (Chronic group); $N = 17$ (Transitory group).

clinical range of the CBCL for the four subscales, also per group and per assessment time, for descriptive purposes.

For the Total Problems scale, the χ^2 at T1 and T2 were found to be non-significant. However, at T3, the proportion of children in the CH group showing a clinical level of behavior problems in general was significantly higher than in the TR group ($p = .002$).

Discussion

Overall, the results of the present study suggest that chronicity of maltreatment is an important variable that must be considered in studies examining the links between maltreatment and child behavioral and emotional outcomes. In this study, the chronically maltreated children showed, after 6 years, a greater proportion of emotional problems than their peers in transitory maltreatment situations. They were also more likely to exhibit a level of problems considered to be extremely elevated, placing these children in a problematic or clinical range. These results confirm that there are differences in behavior problems, not only between maltreated and non-maltreated children, but also among the maltreated children themselves. According to Manly et al. (1994), various aspects of the maltreatment situation, such as duration, type and severity of abuse, must be taken into consideration in order to more clearly identify the impact of maltreatment on the development of behavior problems.

Several specific results of the present study partially confirm our first three hypotheses and are worth noting. First, the results revealed a significant Group \times Time interaction effect for Anxiety/Depression problems. The chronically maltreated children showed over time a greater degree of this type of problems than the children in the transitory group. The difference between the two groups of children becomes apparent at time 3, when children are about 10 years old. It is conceivable that, in chronically maltreated children, the cumulative effects of stress explain at least in part the increase in these specific types of emotional problems. In addition, children in this sample were all severely neglected. The result linking maltreatment to depression in this study is consistent with results from other studies, such as Erickson et al. (1989) and Crittenden (1996), which also demonstrated relations between neglect and depression. It is also possible that the children in the chronic group had been more severely maltreated, and that an interaction between the type of abuse and the severity could explain the results. Clearly, severity is another dimension of maltreatment that must be taken into account in future research (Bolger et al., 1998).

Results of analyses for the Aggressive Behavior and Withdrawn scales show marginal but statistically non-significant Group \times Time interaction effects. The level of aggressive behavior and withdrawal of children in the transitory group tend to diminish from T1 to T3. Although we need to be cautious in discussing such findings, these results seem consistent with those of other studies (see, Bolger et al., 1998; Manly et al., 1994) and may suggest that chronicity of maltreatment impacts on several types of behavior and emotional problems. It is possible that in the case of aggression or withdrawal problems, effects that are not clearly detectable in this study will become clearer with age, as children enter adolescence. Furthermore, the children in both groups exhibit the same types of problems, only the level of these problems differs.

Finally, our results show that at T3 (but not at T1 or T2) the children in the chronic group are more likely than the children in the transitory group to be situated in the clinical range of the CBCL for the Total Problems scale. This result, which concurs with the results mentioned previously and confirms our fourth hypothesis, also clearly shows the impact of the chronic aspect of a maltreatment situation.

Based on results from the different analyses, we believe that for the children in the transitory group, CPS interventions resulted in a decrease of maltreatment, leading to a decrease (or at least a stabilization) in the behavioral problems in these children. This finding may be important since it would show that when Child Protection Service interventions lead to an improvement in the overall family situation, the impact of these interventions may reach as far as the behavior of the children. However, the improvement observed in the transitory group was not immediate; it occurred gradually following the decrease in maltreatment. One of the challenges of future research will be to determine which factors play a role in whether or not CPS interventions will be successful in certain maltreating families. A recent study by Éthier et al. (2004) showed that maltreating mothers who do not respond well to intervention had often been sexually abused and subjected to repeated placement in foster homes during their childhood. These results enhance our understanding but need to be replicated and examined in greater detail.

The present study has raised the important question of how to define chronicity. Our definition is based on two criteria: the families' CPS file and the mothers' CAPI score. In previous studies, chronicity was simply based on the number of years or months the family had received child protection services. It is known that the number of years or months of services received does not always provide an accurate representation of the actual maltreatment situation. It is therefore important to find a way to measure chronicity that better reflects that reality. This will be one of the important conceptual challenges of future work in the field of maltreatment.

Referring to norms provided by the author of the CBCL on children from non-clinical samples (Achenbach, 1991), the children in the transitory group quite clearly continue to have a higher level of behavior problems than non-maltreated children. Several questions remain, for example: Will the level of aggressive behavior and social withdrawal problems exhibited by the children in the transitory group at time 3 continue to decrease and reach a more normative level? Some of the effects of maltreatment suffered by children may be felt throughout their entire development in spite of an improvement in the family situation.

Limits to the study

A number of particularities of the current study require that its findings be replicated before results and conclusions may be generalized. The first involves the small number of subjects. Chi-square analysis involved small cell sizes, probably yielding low statistical power. Second, children's problem behaviors were assessed from only the mother's perspective. It is reasonable to believe that maternal functioning may impact their perspectives of their children's functioning. Future studies should include assessments of child outcome from other informants or observational data in addition to parental reports. Third, it is possible that the families that took part in this study are not wholly representative of families in CPS. Our sample was made of severely neglectful parents, about half of them being also physically abusive to their children. Future research needs to consider other aspects of maltreatment (age at the beginning of maltreatment, severity of abuse, etc.) when studying the impact of chronicity of maltreatment on child outcome.

Finally, the study confirms that there are differences among maltreated children in levels of behavior and emotional problems. Chronically maltreated children appear to be at high-risk of developing clinical levels of problems. Chronicity must be taken into account in order to identify more clearly the impact of maltreatment on the child and to better adapt intervention to the types of families involved.

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Résumé

French- and Spanish-language abstracts not available at time of publication.

Resumen

French- and Spanish-language abstracts not available at time of publication.