

# A Comparative Study of Parental Sensitivity Between Three Groups of Adolescent Mothers

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**ABSTRACT.** Given the central role that parental sensitivity may potentially play in the intergenerational transmission of social maladjustment,

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This study would not have been possible without the active participation of the young mothers. The authors would also like to thank the Rosalie-Jetté School, particularly Michèle Boily, Social Service Officer, and Danielle Woolley, Principal, for their invaluable collaboration. A very special thanks to the staff of the Centres jeunesse de Montréal and University of Montreal students for collecting the data. Finally, the authors wish to thank Donald Morrisson for data base management and Sylvie Cormier for excellent secretarial work.

This project was made possible by grants from the Conseil Québécois de la Recherche Sociale (RS-3317).

intervention regarding the parental sensitivity of mothers with social adaptation difficulties is vital. Our aim was to compare the parental sensitivity of 33 adolescent mothers in group homes with that of a school group of 63 adolescent mothers divided into two subgroups according to the presence or absence of a conduct disorder diagnosis. Our results revealed that the proportion of sensitive mothers was greater among the adolescents living in group homes (29%) than among the group of adolescent mothers with a conduct disorder diagnosis who did not live in group homes during the first four months of their children's lives (7%). In particular, we found a smaller proportion of unresponsive mothers in the first group than in the second. The lack of difference among the groups with regards to the numbers of controlling mothers may be explained by the greater difficulty experienced for group home staff members in detecting overly controlling behavior in mothers and taking appropriate action to avoid any risk of physical abuse of children. [Article copies available for a fee from The Haworth Document Delivery Service: 1-800-HAWORTH. E-mail address: <docdelivery@haworthpress.com> Website: <<http://www.Haworth Press.com>> © 2004 by The Haworth Press, Inc. All rights reserved.]

**KEYWORDS.** Adolescent mother, conduct disorder, emotional abuse, neglect, parental sensitivity

Parental abuse and parental neglect profoundly affect children's development. Maltreated children exhibit a lack of empathy (Sroufe, 1983), display more behavioral problems and aggression toward peers (Egeland, Sroufe, & Erickson, 1983; Main & George, 1985; Tong, Oates, & McDowell, 1987), and exhibit high levels of depression and low self-esteem (Kaufman & Cicchetti, 1989; Smith, 1996), as well as cognitive and language deficits (Kolko, 1992). Studies of maltreated children have revealed an 80% prevalence rate of atypical D attachment. Type D (disorganized/disoriented) attachment is attributed to children who display no organized strategy for coping with stress during the Strange Situation (see Main & Solomon, 1986). It has been shown to predict hostile behavior toward peers at age five (Lyons-Ruth, Alpern, & Repacholi, 1993) and is considered to be a major risk factor in the development of child psychopathology, particularly with regard to the emergence of externalizing problem behaviors (see van IJzendoorn, Schuengel, & Bakermans-Kranenburg, 1999).

Maltreating parents are more likely than non-maltreating parents to have had a history of abuse (Cicchetti & Lynch, 1993). In addition, high levels of perceived social stress and low socioeconomic status are highly correlated with child maltreatment (Baumrind, 1994; Mrazek, 1993). Studies suggest that other factors are also related to child maltreatment such as a lack of knowledge of parenting, unrealistic expectations about child development, a lack of social support, and the presence of emotional difficulties, in particular, a lack of impulse control under stress (Cicchetti & Lynch, 1993; Mrazek, 1993; see Schellenbach, Whitman, & Borkowski, 1992). Maltreating parents also have a tendency to be depressed, to be less satisfied with their children, to perceive child rearing as more difficult, to use more controlling disciplinary techniques (Crittenden, 1988; Cicchetti & Lynch, 1993; Webster-Stratton, 1985), and to display verbal rejection and hostility toward their children (Martin & Beezley, 1977).

Adolescent mothers often do not have at their disposal all the resources (personal, social, and economic) needed for optimal adaptation to their situation of precocious motherhood and all that it requires. Thus, many of them are poor and poorly educated, live in conditions of chronic stress, and have a limited social support network (Buchholz & Korn-Bursztyn, 1993). In addition, adolescent mothers more frequently have a history of maltreatment (Smith, 1996), tend to suffer from depression (Osofsky, Hann, & Peebles, 1993), and manifest more symptoms of conduct disorder (Zoccolillo, Meyers, & Assiter, 1997). As a result of these conditions, combined with the fact that they have not completed their own development, adolescent mothers may be less able to adequately care for their children. Researchers have shown adolescent mothers to be less sensitive and less responsive to their children, to interact negatively with them (McAnarney, Lawrence, Ricciuti, Polley, & Szilagy, 1986), and to be more intolerant and inclined to use physical punishment (Baranowski, Schilmoeller, & Higgins, 1990; Brooks-Gunn & Furstenberg, 1986; Reis, 1989) than adult mothers. They tend to have limited knowledge of child development and parenting practices (Reis, 1989; Whitman, Borkowski, Schellenbach, & Nath, 1987), and are more likely to see their children as having a difficult temperament (Frodi, Grolnick, Bridges, & Berko, 1990). In short, adolescent mothers, because of their conditions and life history, are at greater risk of neglecting and/or abusing their children, who, if victimized, are at greater risk of developing a conduct behavior disorder. In order to decrease the risk that these children will develop a conduct behavior disorder, it is

important to intervene as early as possible with those mother-child dyads that are most at risk.

Parenting behaviors are known to play a central role in predicting children's behavioral problems (Shaw & Vondra, 1995). Parental sensitivity is considered to be one of the most important dimensions of parental behavior. Parental sensitivity is the parent's ability to perceive and interpret the child's signals and to respond promptly and appropriately to the child's needs. Studies point to a relation between maternal passivity and unresponsiveness during the first year of the child's life and subsequent externalizing and internalizing behaviors in preschool-aged children (Shaw, Keenan, & Vondra, 1994; Shaw et al., 1998). Furthermore, research has shown that parental sensitivity is one of the best predictors of attachment (Ainsworth, Blehar, Waters, & Wall, 1978; DeWolff & van IJzendoorn, 1997; van den Boom, 1994), which in turn has been shown to predict social competence, externalizing behaviors in preschool and school-aged children, dependence on adults, social withdrawal, passivity, and submission to peers (Erickson, Sroufe, & Egeland, 1985; Lyons-Ruth et al., 1993). Given the central role that parental sensitivity may play in the intergenerational transmission of social maladjustment, intervention regarding the parental sensitivity of mothers with social adaptation difficulties is vital.

The exploratory study presented here is part of a broad research program aimed at providing a better understanding of the mechanisms underlying intergenerational transmission of social adjustment difficulties. The aim of this study is to verify (through post hoc analysis) whether adolescent mothers living with their children in a group home display greater parental sensitivity towards their four-month olds than adolescent mothers having the same profile but not living in a group home.

## **METHOD**

### ***Participants***

The participants in this study were 96 French-speaking Canadian adolescent mothers. We approached adolescents who were pregnant with their first child or whose first child was under two months old, and 95% of them agreed to participate. At the time of recruitment, 76 participants were pregnant with their first child, whereas 20 had a child less than two months of age. One-third ( $n = 33$ ) of the adolescent mothers were living in group homes.

The four group homes involved in the study are rehabilitation centers that provide services to adolescent and young adult women who are pregnant or have a child 0 to 5-years-old, and who are experiencing serious adjustment problems on a personal or a parental level. Social services, community service centers, shelters, and community organizations make referrals to the group homes. Although most women live there voluntarily, some are compelled to live in a group home by youth protection services. Women can live in these homes for a maximum of 12 months. The homes can accommodate up to seven or eight mother-child dyads at a time and the constant presence of staff members allows for individualized rehabilitation services for the mothers.

A specific staff member is assigned to each mother. Together, they develop an intervention plan taking into account the parental difficulties identified by the staff member, and a personal goal chosen by the mother. This personal goal may vary from one mother to the next: for example, some want to go back to school, while others want to become better mothers. What all the mothers have in common is the shared experience of daily life in the group with other mothers and staff members. The group homes offer a stable life style, with a schedule (about meals, bedtime, etc.) that must be respected. As staff members see the mother-child dyads at different times of the day and week, there are multiple opportunities for either modeling or more direct intervention where necessary, or for simply taking care of the mothers. Often the mothers have received inadequate mothering during their childhood, and thus have difficulty taking care of their own children. The staff members intervene with regard to the infants' physical security and stimulation, as well as simply to highlight positive behaviors they observe in mothers. Finally, they work with the mothers to develop their judgment, autonomy, and sense of responsibility, and help them become more aware of the importance of breaking out of their isolation.

The remaining participants ( $n = 63$ ) were recruited upon entering the Rosalie-Jetté School, which is part of French Montreal School Board network. The Rosalie-Jetté School's vocation is to help adolescent mothers finish high school. In addition to daycare services, the school offers courses on child development and parenting. Referrals to the Rosalie-Jetté School are made by schools affiliated with various metropolitan Montreal school boards, including school boards on the South and North Shores, and also by nurses and doctors in CLSCs (Centres locaux de services communautaires—Local Community Services Cen-

ters). Publicity (television programs, articles, etc.) has also played a role in the enrollment of new students at this school.

The mean age of the mothers at the time of their child's birth was 16.9 years ( $SD = 1.2$ ), with a range from 13 to 19 years. The majority of the participants (76%) were born in Canada, with 24% being born outside of Canada.

The mean education level was 8.91 years of schooling ( $SD = 1.33$ ), with a range from 6 to 11 years. The adolescents in our sample can be classified as "poor" based on their source of income and their parents' occupations. Nearly half (48.8%) of the participants received government welfare benefits, 36.4% received financial support from their parents and 4.5% from their spouse, 1.1% had a job, 6.8% had no income, and 2.3% had income from other sources. Of the adolescents who received financial assistance from their parents, 22% of their fathers and 56.7% of their mothers were either unemployed or on social welfare at the time of the study.

Twenty-six percent of the participants stated that the pregnancy had been planned, 31.6% said that they had considered an abortion, and 41.7% found themselves without a partner during their pregnancy.

Approximately 77% of the group home adolescents had a diagnosis of conduct disorder. Given that adolescents are placed in group homes primarily due to their behavioral problems, we decided to divide the participants from the Rosalie-Jetté School into two comparison groups distinguished by the presence or absence of a conduct disorder diagnosis. Indeed, behavioral problems are considered to be an important predictor of early pregnancy (Kessler et al., 1997; Serbin, Peters, McAffer, & Schwartzmann, 1991). The distribution of the adolescent mothers at the school according to the conduct disorder diagnosis revealed the existence of two distinct groups: a group of 34 adolescents with a conduct disorder diagnosis, which we referred to as the "conduct disorder school group"; and a group of 29 adolescents without this diagnosis, referred to as "non-conduct disorder school group." Thus, we were able to compare the adolescents living in the group homes to a group of adolescents with a conduct disorder diagnosis not living in group homes, and to a group of adolescents without a conduct disorder diagnosis also not living in group homes. One-way analyses showed that the three groups of adolescents (33 in the group-home group, 34 in the conduct disorder school group, and 29 in the non-conduct disorder school group) did not differ with regard to the mother's age at the child's birth ( $F(2, 93) = 0.88, p > .05$ ). However, adolescents in group homes had about one year less schooling than adolescents in the two other groups ( $F(2, 93) = 6.72, p <$

.01; Scheffé,  $p < .05$ ). Table 1 presents, for each of those three groups, the percentages of immigrants, of unplanned pregnancies, of partners present, of adolescents on social welfare or unemployed, and of the adolescents' parents on social welfare or unemployed. Chi-squared tests showed a significant difference only with regards to the number of adolescents who were unemployed or on social welfare such that more adolescents in the group home group than in the two other groups were unemployed or on social welfare.

### *Procedure*

In each of the four group homes, there was a staff member who, after having received basic training, was responsible for recruiting participants and for data collection. At the Rosalie-Jetté School, research assistants (female psychology students) were responsible for recruiting participants and for data collection. Staff members and research assistants met with the participants to whom they were assigned often enough to develop a relationship of trust, which lessened the degree of attrition. Participants completed questionnaires at home, at school, or in the group home, while in the presence of an assistant or a staff member in case they had reading difficulties. When the children were four months old, each mother-child

TABLE 1. Comparison of adolescent mothers in the group home with those in the two school groups.

|                               | Group homes | School                            |                                      | N  | Chi-squared (df = 2) |
|-------------------------------|-------------|-----------------------------------|--------------------------------------|----|----------------------|
|                               |             | With a conduct disorder diagnosis | Without a conduct disorder diagnosis |    |                      |
| Immigrants                    | 36%         | 15%                               | 21%                                  | 96 | 4.56                 |
| Unplanned pregnancy           | 67%         | 77%                               | 79%                                  | 96 | 1.45                 |
| Partner present               | 58%         | 53%                               | 66%                                  | 96 | 1.03                 |
| Social welfare or unemployed: |             |                                   |                                      |    |                      |
| adolescent                    | 80%         | 39%                               | 52%                                  | 88 | 10.38**              |
| mother                        | 69%         | 53%                               | 57%                                  | 85 | 1.56                 |
| father                        | 30%         | 18%                               | 26%                                  | 57 | 0.77                 |

\*\* $p < .01$

dyad was videotaped at the University of Montreal in a room with three hidden cameras. All participants signed a consent form guaranteeing their anonymity and the confidentiality of the information collected. They were also informed that the law obliges all persons, including researchers, to report to youth protection authorities any situation that may potentially place a child's development or security in jeopardy.

### ***Instruments***

Except for parental sensitivity, which was assessed when each mother's child was four months old, all other instruments were completed during the adolescent's pregnancy ( $n = 76$ ) or within the first two months after the child's birth ( $n = 20$ ).

*Depression and Conduct Disorder.* Diagnoses of lifetime major depression and conduct disorder were based on an interview conducted using a computerized French version (CDIS Group, 1991-92) of the NIMH *Diagnostic Interview Schedule* (DIS; Robins, Helzer, Croughan, & Ratliff, 1981) that employs DSM-III-R criteria. The adolescents enjoyed working with this user-friendly instrument, which permitted them to enter their answers to the questions directly into a laptop computer, thus ensuring complete confidentiality. A research assistant was present, however, to install the program and to provide assistance when required. A diagnosis of depression was assigned when the participant had experienced at least one episode of major depression prior to age 15, and a diagnosis of conduct disorder was assigned when the participant had at least three symptoms of conduct disorder prior to age 15. Questions concerning conduct disorder symptoms were drawn from the DIS assessment of Antisocial Personality Disorder.

*Conjugal Relationship.* Adolescents with boyfriends (58% of cases) completed the Dyadic Adjustment Scale (Spanier, 1976) to permit assessment of the quality of their conjugal relationships. The questionnaire consists of 32 items with a six-point Likert-type scale. In Spanier's study, this instrument proved to be valid with either married or divorced couples. Cronbach's alpha varied from .73 to .94 for the subscales, and was .96 for the total score. In our sample, Cronbach's alpha for the total score was 0.85.

*Stress.* Stress was assessed using the Psychological State of Stress Measure (PSSM; Lemyre & Tessier, 1988). This questionnaire is a measure of the subjective experience of feeling stressed based on 53 affective, cognitive, behavioral, and physical descriptors, on an eight-point Likert-type scale. The original validation of the questionnaire showed a test-retest reliability of .64. In our sample, the alpha reliability coefficient for the total score was .93.



*Attachment History.* Attachment representations were assessed using the *Parental Bonding Instrument* (PBI; Parker, Tupling, & Brown, 1979). The PBI is a questionnaire that elicits participants' memories about their mothers and fathers on the "care-indifference/rejection" (12 items) and "control/overprotection-autonomy" (12 items) axes during the first 16 years of life. This instrument consists of items with a four-point Likert-type scale. When initially validated, the test-retest reliability ranged from .76 to .92. In our sample, Cronbach's alpha scores for the care and overprotection scales were .90 and .81, respectively, for the mother version, and .90 and .84, respectively, for the father version.

*Maltreatment History.* Maltreatment history was assessed using a 70-item self-report questionnaire, the *Childhood Trauma Questionnaire* (Bernstein, Fink, Handelsman, Foote, Lovejoy, Wenzel, Sapareto, & Ruggiero, 1994; Bernstein, Ahluvalia, Pogge, & Handelsman, 1997). Items are rated on a five-point Likert-type scale according to the frequency with which the participant was subjected to maltreatment during childhood, but without identifying the perpetrators of maltreatment. The instrument provides scores for five empirically derived factors and a total score. When first validated, it demonstrated good test-retest reliability over 2 to 6 month intervals ( $r = .88$ ). The internal consistency of each of the five dimensions was excellent for our sample: Physical abuse (11 items; Cronbach's alpha = .94), Emotional abuse (11 items; alpha = .91), Emotional neglect (17 items; alpha = .93), Physical neglect (8 items; alpha = .85), and Sexual abuse (5 items; alpha = .80), as well as the total score (alpha = .97).

*Parental Knowledge.* Knowledge about developmental processes and parenting strategies were evaluated using the *Knowledge of Infant Development Inventory* (KIDI; MacPhee, 1981). MacPhee showed good test-retest reliability over a two-week interval ( $r = .92$ ). The two subscales used were the *Principles scale* (alpha = .67 in our sample), which includes ten statements about child development, descriptions of general abilities, and normal and atypical development, and the *Parenting scale* (alpha = .66), which includes eight items concerning parenting strategies and parental responsibilities.

*Parental Sensitivity.* When each participant's child was four months old (mean age 4.4 months,  $SD = 0.5$ , range of 3.6 to 6.8), we videotaped the mother-child dyads during five minutes of unstructured play in a specially designed room at University of Montreal in which 10 small toys were set out on the carpet. Subsequently, all videos were coded using the *CARE-Index* (Crittenden, 1988) by two research assistants trained by Patricia M. Crittenden. According to Crittenden, three min-

utes are sufficient to obtain valid data with this well-known instrument. The following seven dimensions are coded: facial expression, vocal expression, position and body contact, expression of affection, turn-taking, control, and choice of activity. On the basis of this coding, three scales are generated for the mother (sensitive, controlling, and unresponsive), which add up to a total score of 14, and four scales for the child (cooperative, difficult, passive, compulsive-compliant), which also add up to a score of 14. Control is not defined here as a normative parental practice in which rules and limits are imposed on the child (see Baumrind, 1966), but rather refers to parental behaviors that are intrusive, over-stimulating, and insensitive to the infant's emotional state. Interrater reliability ranged from good to excellent: The correlations obtained for each of the seven scales varied from .84 to .95.

## RESULTS

In order to verify the association between living in a group home and the parental sensitivity of adolescent mothers, we employed two different approaches. First, we compared the group home adolescents and the adolescents in the other two groups with regard to their mean scores on the parental sensitivity scales. Secondly, we compared the three groups in terms of the number of mother-infant dyads in each relational dynamic category. But first, it was necessary to verify whether the presence or absence of a conduct disorder diagnosis was a relevant criterion for dividing the school adolescents into two subgroups for the purposes of comparison with the group home adolescents. To this end, we examined whether the three groups differed in terms of risk and protective factors for maltreatment.

### *Comparison of the Presence of Risk and Protective Factors for Maltreatment in the Three Groups*

Previous studies have identified a number of determinants of maltreatment: parental history of maltreatment, low socioeconomic status, high social stress, parental emotional problems such as lack of impulse control in stressful situations, lack of social support, low marital satisfaction, lack of knowledge about parenting skills and child development, alcoholism, depression, and conduct disorder (Baumrind, 1994; Cassidy, Zoccolillo, & Hughes, 1996; Cicchetti & Lynch, 1993; Mrazek, 1993; Serbin et al., 1991; Straus, 1980). Table 2 presents the adjusted

TABLE 2. Comparison of adjusted mean scores of risk and protective factors for maltreatment among adolescents from the group homes and the two school groups.

| Risk and protective factors for maltreatment | Group homes (n = 28) | School                                     |   | Oneway F (2,80)        |
|--|----------------------|--|---|------------------------|
|  |                      | With a conduct disorder diagnosis (n = 28) | Without a conduct disorder diagnosis (n = 27) |                        |
| <u>Maltreatment history</u>                  |                      |  |   |                        |
| Physical abuse                               | 21.82                | 21.71                                      | 17.19   | 1.64 <sup>1</sup>      |
| Emotional abuse                              | 26.30                | 29.06 <sup>a</sup>                         | 21.53 <sup>b</sup>                            | 3.67*                  |
| Physical neglect                             | 15.47                | 13.77                                      | 11.86   | 2.67* <sup>1</sup>     |
| Emotional neglect                            | 43.20                | 44.92                                      | 40.18   | 0.65                   |
| Sexual abuse                                 | 9.60                 | 8.40                                       | 6.76  | 2.62 <sup>1</sup>      |
| Total score                                  | 10.76                | 10.40                                      | 8.74  | 2.76*                  |
| <u>Attachment history</u>                    |                      |  |   |                        |
| Maternal caring                              | 24.54                | 26.10                                      | 26.47   | 0.26                   |
| Maternal control                             | 17.86                | 15.10                                      | 14.34   | 0.90                   |
| Paternal caring                              | 16.56                | 17.93                                      | 23.17   | 1.94 <sup>1</sup>      |
| Paternal control                             | 19.75                | 15.91                                      | 15.07   | 1.09                   |
| <u>Number of depressive symptoms</u>         | 6.44 <sup>a</sup>    | 6.53 <sup>a</sup>                          | 4.22 <sup>b</sup>                             | 9.72***                |
| <u>Number of conduct disorder symptoms</u>   | 4.04 <sup>a</sup>    | 5.28 <sup>a</sup>                          | 1.68 <sup>b</sup>                             | 18.62**** <sup>1</sup> |
| <u>Stress</u>                                | 175.42               | 168.54                                     | 159.12  | 1.61                   |
| <u>Quality of conjugal relationship</u>      | 113.20               | 113.67                                     | 120.51  | 1.01                   |
| <u>Knowledge of parenting skills</u>         | 3.66                 | 4.63                                       | 4.56  | 1.54 <sup>1</sup>      |
| <u>Knowledge of child development</u>        | 5.61                 | 6.42                                       | 6.25  | 0.40                   |

\*p < .05 \*\*p < .01 \*\*\*p < .001

<sup>1</sup>significantly different variances (p < .05)

<sup>a,b,c</sup> significant differences of means on two by two comparisons (Scheffé: p < .05)

mean scores of some of these determinants of maltreatment across the three groups of participants, after entering level of education and income (social welfare/unemployed) into the univariate analysis of variance as covariates. The group home adolescents and the school conduct disorder adolescents had similar mean scores for conduct disorder and depressive symptoms, which were significantly higher than the mean

score of the non-conduct disorder school group. This is normal given that participants were classified according to that criterion, and there is often comorbidity between conduct disorder and depression. The first two groups also had similar mean total scores of maltreatment history, particularly in terms of emotional abuse and physical neglect. Globally, these two groups (with a conduct disorder diagnosis) had significantly higher total scores of maltreatment history than the group without a conduct disorder diagnosis. Likewise, there were no significant differences with regard to attachment history, stress, quality of conjugal relationship, and knowledge of parenting skills and child development. Note also that the group home variances and conduct disorder school group variances were significantly higher than those of the non-conduct disorder school group for physical abuse, physical neglect, sexual abuse, and paternal caring. In other words, one may conclude that the conduct disorder school group was more comparable to the group home adolescents in terms of the risk of the mothers maltreating their children, at least at the time of the evaluation during the adolescents' pregnancy.

### ***Comparison of the Adolescent Mothers' Parental Sensitivity Scale Scores Toward Their Four-Month-Olds Across the Three Groups***

For each of the three sensitivity scales (sensitive, controlling, unresponsive), we calculated the adjusted sensitivity scale score after level of education and income (social welfare/unemployed) were entered into the univariate analysis of variance as covariates. The analyses showed no significant differences among the three adolescent mother groups, except with respect to the sensitivity scale, for which the mean score of the school group without a conduct disorder diagnosis tended to be higher than that of the other two groups ( $F(2, 80) = 3.04, p < .06$ ).

### ***Comparison of Mother-Infant Relational Dynamics Among the Three Groups***

Given the possibility that the mother-infant relational dynamic might be more revealing than the parental sensitivity scales, we decided to examine the proportions of different relational dynamics among the three groups of adolescent mothers, taking into account simultaneously both the parental sensitivity scales and the infant reaction scales. In order to identify relational dynamics, scores on the seven CARE-Index scales were entered into a hierarchical cluster analysis using Ward's method, with squared Euclidean distances as

measures of dissimilarity. Four clusters were identified, composed of 24, 37, 19, and 16 dyads, respectively. A one-way analysis of variance was used to describe the dyads comprised in each cluster. For the seven scales, Table 3 presents group means, standard deviations, F-values, and the significance of these comparisons. In order to increase the number of dyads per group, we decided to combine the groups on the basis of maternal behavior. Table 4 presents group means, standard deviations, F-values, and significance of these comparisons for three types of dyads: 24 sensitive mother/cooperative child, 37 unresponsive mother/passive child, and 35 controlling mother/difficult or compulsive-compliant child.

For the following analysis, 13 subjects were excluded in order to control for differences of educational level and income among the groups that were previously identified. With regard to relational dynamics, the chi-squared analyses shows that the distribution of participants in the group homes resembles that of participants in the non-conduct disorder school group much more closely than that of participants in the conduct disorder school group (see Table 5). The distribution of relational dynamics among the group home participants is significantly different than that of participants in the conduct disorder school group ( $\chi^2 = 8.31$ ,  $df = 1$ ,  $p < .01$ ), but is not significantly different than that of participants

TABLE 3. Group means (SD) on the 7 Care-Index scales for the 4 clusters.

|                         | Group 1:<br>Sensitive<br>mother/<br>cooperative<br>child<br><br>(n = 24) | Group 2:<br>Unrespon-<br>sive mother/<br>passive child<br><br>(n = 37) | Group 3:<br>Controlling<br>mother/<br>compulsive-<br>compliant<br>child<br><br>(n = 19) | Group 4:<br>Controlling<br>mother/<br>difficult-<br>passive child<br><br>(n = 16) | Oneway<br>F (3, 92) |
|-------------------------|--|--|---|---|---------------------|
| Mother                  |  |  |   |   |                     |
| Sensitive               | 9.04 <sup>a</sup> (1.63)   | 5.43 <sup>b</sup> (1.95)   | 2.26 <sup>c</sup> (2.45)  | 2.88 <sup>c</sup> (1.50)  | 54.74***            |
| Controlling             | 3.04 <sup>a</sup> (1.68)   | 3.97 <sup>a</sup> (1.89)   | 10.26 <sup>b</sup> (2.23)   | 8.00 <sup>c</sup> (1.93)  | 68.63***            |
| Unresponsive            | 1.92 <sup>a</sup> (1.32)   | 4.59 <sup>b</sup> (1.66)   | 1.47 <sup>a</sup> (1.90)  | 3.13 <sup>ab</sup> (2.31)   | 18.01***            |
| Child                   |  |  |   |   |                     |
| Cooperative             | 9.08 <sup>a</sup> (2.50)   | 4.65 <sup>b</sup> (1.42)   | 2.37 <sup>c</sup> (2.61)  | 2.38 <sup>c</sup> (0.81)  | 56.86***            |
| Compulsive<br>compliant | 0.38 <sup>a</sup> (0.49)   | 1.92 <sup>b</sup> (1.64)   | 8.11 <sup>c</sup> (2.38)  | 2.69 <sup>b</sup> (1.78)  | 85.82***            |
| Difficult               | 2.25 <sup>a</sup> (2.05)   | 1.57 <sup>a</sup> (0.87)   | 2.42 <sup>a</sup> (1.43)  | 5.81 <sup>b</sup> (1.22)  | 34.94***            |
| Passive                 | 2.29 <sup>a</sup> (1.37)   | 5.86 <sup>b</sup> (1.51)   | 1.11 <sup>a</sup> (1.10)  | 3.13 <sup>c</sup> (1.75)  | 56.09***            |

\*\*\* $p < .001$

<sup>a,b,c</sup> significant differences of means on two by two comparisons (Scheffé:  $p < .05$ )

TABLE 4. Group means (standard deviation) on the 7 Care-Index scales for the 3 identified relational dynamics.

|                         | Group 1<br>Sensitive<br>mother/<br>cooperative<br>child<br><br>(n = 24) | Group 2<br>Unresponsive<br>mother/passive<br>child<br><br>(n = 37) | Group 3<br>Controlling<br>mother/<br>difficult or<br>compulsive<br>compliant child<br><br>(n = 35) | Oneway<br>F (2, 93) |
|-------------------------|---|--|--|---------------------|
| Mother                  |   |  |  |                     |
| Sensitive               | 9.04 <sup>a</sup> (1.63)  | 5.43 <sup>b</sup> (1.95)   | 2.54 <sup>c</sup> (2.06)   | 81.77***            |
| Controlling             | 3.04 <sup>a</sup> (1.68)  | 3.97 <sup>a</sup> (1.89)   | 9.23 <sup>b</sup> (2.37)   | 86.63***            |
| Unresponsive            | 1.92 <sup>a</sup> (1.32)  | 4.59 <sup>b</sup> (1.66)   | 2.23 <sup>a</sup> (2.22)   | 21.62***            |
| Child                   | 9.08 <sup>a</sup> (2.50)  | 4.65 <sup>b</sup> (1.42)   | 2.37 <sup>c</sup> (1.97)   | 86.22***            |
| Cooperative             |   |  |  |                     |
| Compulsive<br>compliant | 0.38 <sup>a</sup> (0.49)  | 1.92 <sup>b</sup> (1.64)   | 5.63 <sup>c</sup> (3.45)   | 17.80***            |
| Difficult               | 2.25 <sup>a</sup> (2.05)  | 1.57 <sup>a</sup> (0.87)   | 3.97 <sup>b</sup> (2.16)   | 41.23***            |
| Passive                 | 2.29 <sup>a</sup> (1.37)  | 5.86 <sup>b</sup> (1.51)   | 2.03 <sup>a</sup> (1.74)   | 64.63***            |

\*\*\*p &lt; .001

a,b,c significant differences of means on two by two comparisons (Scheffé: p &lt; .05)

TABLE 5. Number of adolescent mothers corresponding to each of the three mother-child relational dynamics, assessed when the children were 4 months old, for the three groups.

| Mother-child relational dynamics                                | Group homes<br>(n = 28) | School  |   |
|---|-------------------------|---|---|
|   |                         | With a conduct<br>disorder<br>diagnosis<br>(n = 28) | Without a<br>conduct<br>disorder<br>diagnosis<br>(n = 27) |
| Sensitive mother/cooperative child                              | 8                       | 2   | 9   |
| Unresponsive mother/passive child                               | 7                       | 17  | 9   |
| Controlling mother/difficult or com-<br>pulsive-compliant child | 13                      | 9   | 9   |

in the non-conduct disorder school group ( $\chi^2 = 0.02$ ,  $df = 1$ , n.s.). On the other hand, the distribution of relational dynamics in the conduct disorder school group is significantly different than that in the non-conduct disorder school group ( $\chi^2 = 4.16$ ,  $df = 1$ ,  $p < .05$ ). More specifically, the proportion of sensitive mothers is much higher among adolescents living in group homes (28.6%) than among adolescents of the conduct dis-

order school group (7.1%). Furthermore, the number of unresponsive mother/passive child dyads in group homes (25%) does not differ from the number in the non-conduct disorder school group (33.3%), but both are lower than the number of such dyads in the conduct disorder school group (60.7%). Finally, the numbers of controlling mothers (46%, 32%, and 33%) do not differ from one group to another.

## DISCUSSION

First, our results show that it is preferable to use relational dynamics rather than maternal scales to compare groups of adolescent mothers. This may be linked to the fact that the relational dynamic takes into account the infant's behavior in response to the mother's behavior, and vice versa. It is possible that the fact of living in a group home has a direct effect on the infant who, in return, influences the dyadic exchange.

Our results not only confirm the existence of the well-recognized link between parental psychopathology and parenting, but, in particular, also show a link between conduct disorder and parental insensitivity among adolescent mothers. The distribution of group home adolescent mothers across the three relational dynamics was different from that of a group at a comparable maltreatment risk level, whereas it was similar to that of adolescents at a lower maltreatment risk level. However, the design of this study, specifically the lack of a pre-intervention measure of parental sensitivity, does not permit us to conclude that living in a group home is an effective means of breaking this link between conduct disorder and parental sensitivity, as we have not evaluated whether the differences obtained among the groups were due to a change in sensitivity over time.

There have been numerous studies on the parenting behavior of depressed mothers. Depressive mothers are known to be more anxious, negative, inconsistent, irritable, overprotective, and unresponsive to their children's needs. In short, they tend to be either withdrawn or passive, or, conversely, to be intrusive and controlling toward their children. Both are forms of parental insensitivity (Cummings & Davies, 1994; Malphurs, Field, Larraine, Pickens, Pelaez-Nogueras, Yando, & Bendell, 1996). There has been little research on parenting by mothers with externalizing behavioral problems. A comparison of the distribution of unresponsive and controlling mothers in the conduct disorder and non-conduct disorder school groups supports the findings of Cassidy, Zoccolillo, and Hughes (1996), who found that conduct disorder is more

likely to be associated with maternal passivity than controllingness. Thus, although the percentage of controlling mothers is roughly the same in the two school groups, there are more unresponsive mothers in the conduct disorder school group than in the non-conduct disorder school group.

Our results also point to a significant link between the presence of a conduct disorder and the degree of emotional abuse and physical neglect experienced in childhood or adolescence. On the other hand, scores for the five types of maltreatment tended to be higher in adolescent mothers with a conduct disorder diagnosis (from the school and the group homes) than in adolescent mothers in the non-conduct disorder school group.

Our findings are very encouraging in terms of prevention. It is possible that intensive support and counseling of adolescent mothers with a conduct disorder diagnosis during the first four months after the birth of their children could increase the mothers' sensitivity to their children and the infants' cooperation, and particularly the mothers' responsiveness to their children's signals, which might in turn decrease the risks of neglect.

The efficacy of the services provided by group homes for mothers with adjustment difficulties could be due to a number of factors, which cannot be confirmed on the basis of the present study. Firstly, the adolescent mothers in these group homes are well nourished and are less likely to consume cigarettes, alcohol, or drugs during their pregnancy, factors which, according to certain studies, may affect the brain of the foetus and the child's behavior after birth (Orlebeke, Knol, & Verhulst, 1997; Zuckerman & Brown, 1993). Staff members insure that the mother responds to the child's basic needs and attends scheduled medical appointments. Thus, the baby has a better chance of being in good health. The fact that a baby is healthy, active, and smiling is highly likely to exert a positive influence on the relationship with the mother, who may feel more competent as a parent. Secondly, living in group homes may permit the young mothers to distance themselves temporarily from a variety of problems related to home conditions (housing, income, social support, marital conflicts, etc.); this would diminish their stress and enhance their ability to learn. Finally, adolescent mothers are frequently isolated and in conflict with their own parents, whereas those in group homes have staff members as models from whom they can learn appropriate parenting behaviors. In future studies, it would be interesting to assess the effects of each of the types of factors mentioned above. In the present study, this was particularly difficult because an individualized intervention plan was applied to each adolescent.



No difference was found among the groups with respect to controllingness. Forty-three percent of our sample of adolescent mothers obtained a score of four or less on the sensitivity scale, which, according to Crittenden (2000), indicates a high risk level for the infant, who may need protection. Among those adolescent mothers who obtained a low score, 72% were controlling and had a difficult child, or a compulsively compliant child. Thus, it would be important for future research to develop interventions specifically aimed at modifying this relational dynamic in order to decrease the risk of abuse. Staff members said that they found it more difficult to detect excessive parental control than other dysfunctional behaviors. Indeed, it is difficult for any observer to determine at what point parental behavior becomes unduly controlling; that is to say, that the parent cares for the child in a way that is based on the parent's needs rather than the child's. Group home staff members could greatly benefit from training in the detection of excessive parental control.

The apparently low percentage of sensitive mother/cooperative child, even among adolescents who do not have a conduct disorder diagnosis (33%), may be a cause for concern, and suggests that it is just as important to provide services to this group as to adolescents during the first four months after birth. Effective preventive intervention aimed at increasing parental sensitivity might decrease the likelihood that the children of these adolescent mothers end up in the group home network as they grow up. In order to determine whether this percentage of sensitive mothers is unduly low, one would have to compare it with the percentage of sensitive mothers in the general adult population. In any case, it would be highly desirable to know the prevalence of parent-child relational dynamics related to parental sensitivity in a variety of subpopulations, whether clinical or not, in order to improve planning of preventive interventions.

## REFERENCES

- Ainsworth, M. D. S., Blehar, M. C., Waters, E., & Wall, S. (1978). *Patterns of Attachment: A Psychological Study of the Strange Situation*. Hillsdale, NJ: Lawrence Erlbaum.
- Baranowski, M. D., Schilmoeller, G. L., & Higgins, B. S. (1990). Parenting Attitudes of Adolescent and Older Mothers. *Adolescence*, 25, 781-790.
- Baumrind, D. (1966). Effects of Authoritative Parental Control on Child Development. *Child Development*, 37, 887-907.
- Baumrind, D. (1994). The Social Context of Child Maltreatment. *Family Relations*, 43, 360-368.

- Bernstein, D. P., Fink, L., Handelsman, L., Foote, J., Lovejoy, M., Wenzel, K., Sapareto, E., & Ruggiero, J. (1994). Initial Reliability and Validity of a New Retrospective Measure of Child Abuse and Neglect. *American Journal of Psychiatry, 151*, 1132-1136.
- Bernstein, D. P., Ahluvalia, T., Pogge, D., & Handelsman, L. (1997). Validity of the Childhood Trauma Questionnaire in an Adolescent Psychiatric Population. *J. Am. Acad. Child Adolesc. Psychiatry, 36*(3), 340-348.
- Brooks-Gunn, J., & Furstenberg, F. F. (1986). The Children of Adolescent Mothers: Physical, Academic, and Psychological Outcomes. *Developmental Review, 6*, 224-251.
- Buchholz, E. S., & Korn-Burszty, C. (1993). Children of Adolescent Mothers: Are They At Risk for Abuse? *Adolescence, 28*, 361-382.
- Cassidy, B., Zoccolillo, M., & Hughes, S. (1996). Psychopathology in Adolescent Mothers and its Effects on Mother-Infant Interactions: A Pilot Study. *Canadian Journal of Psychiatry, 41*, 379-384.
- CDIS Group. (1991-1992). *Computerized French Version of DIS III-R*. Ottawa, ON: University of Ottawa and Ottawa Civic Hospital.
- Cicchetti, D., & Lynch, M. (1993). Toward an Ecological-Transactional Model of Community Violence and Child Maltreatment: Consequences for Children's Development. *Psychiatry, 56*, 96-118.
- Crittenden, P. M. (1988). Relationships at Risk. In J. Belsky, & T. Nezworski (Eds.), *The Clinical Implications of Attachment*, pp. 136-174, Hillsdale, NJ: Lawrence Erlbaum.
- Crittenden, P. M. (2000). *Coding Manual of the Child-Adult Relationship Experimental Index (CARE-Index)*. Unpublished manual. Family Relation Institute. Miami.
- Cummings, E. M., & Davies, P. T. (1994). Maternal Depression and Child Development. *Journal of Child Psychology and Psychiatry and Allied Disciplines, 35*(1), 73-112.
- DeWolff, M. S., & van IJzendoorn, M.H. (1997). Sensitivity and Attachment: A Meta-Analysis on Parental Antecedents of Infant Attachment. *Child Development, 68*(4), 571-591.
- Dunn, L. M., Thériault-Whalen, C. W., & Dunn, L. M. (1993). *Échelle de Vocabulaire en Images Peabody*. Toronto: Psycan.
- Egeland, B., Sroufe, L. A., & Erickson, M. (1983). The Development Consequences of Different Patterns of Maltreatment. *Child Abuse & Neglect, 7*, 459-469.
- Erickson, M. F., Sroufe, L. A., & Egeland, B. (1985). The Relationship Between Quality of Attachment and Behavior Problems in Preschool in a High-Risk Sample. In I. Bretherton, & E. Waters (Eds.), *Growing Points in Attachment Theory and Research: Monographs of the Society for Research in Child Development, 50*(1-2), pp. 147-166, Serial No. 209.
- Frodi, A., Grolnick, W., Bridges, L., & Berko, J. (1990). Infants of Adolescent and Adult Mothers: Two Indices of Socioemotional Development. *Adolescence, 25*, 363-374.
- Kaufman, J., & Cicchetti, D. (1989). The Effects of Maltreatment on School-Aged Children's Socioemotional Development: Assessments in a Day Camp Setting. *Developmental Psychology, 25*, 516-524.

- Kessler, R. C., Berglund, P. A., Foster, C. L., Saunders, W. B., Stang, P. E., & Walters, E. E. (1997). Social Consequences of Psychiatric Disorder, II: Teenage Parenthood. *American Journal of Psychiatry*, *154*, 1405-1411.
- Kolko, D. J. (1992). Characteristics of Child Victims of Physical Violence: Research Findings and Clinical Implications. *Journal of Interpersonal Violence*, *7*, 244-276.
- Lemyre, L., & Tessier, R. (1988). Mesure de Stress Psychologique (MSP): Se Sentir Stressé-e. *Canadian Journal of Behavioural Science*, *20*(3), 302-321.
- Lyons-Ruth, K., Alpern, L., & Repacholi, B. (1993). Disorganized Infant Attachment Classification and Maternal Psychosocial Problems as Predictors of Hostile-Aggressive Behavior in the Preschool Classroom. *Child Development*, *64*, 572-585.
- Main, M., & George, C. (1985). Responses of Abused and Disadvantaged Toddlers to Distress in Agemates: A Study in the Day Care Setting. *Developmental Psychology*, *21*, 407-412.
- Main, M., & Solomon, J. (1986). Discovery of an Insecure-Disorganized/Disoriented Attachment Pattern. In T. B. Brazelton, & M. W. Yogman (Eds.), *Affective Development in Infancy* (pp. 95-124). Norwood, NJ: Ablex.
- Malphurs, J. E., Field, T. M., Larraine, C., Pickens, J., Pelaez-Nogueras, M., Yando, R., & Bendell, D. (1996). Altering Withdrawn and Intrusive Interaction Behaviors of Depressed Mothers. *Infant Mental Health Journal*, *17*(2), 152-160.
- Martin, H. P., & Beezley, P. (1977). Behavioral Observations of Abused Children. *Developmental Medicine and Child Neurology*, *19*, 373-387.
- McAnarney, E. R., Lawrence, R. A., Ricciuti, H. N., Polley, J., & Szilagyi, M. (1986). Interactions of Adolescent Mothers and their 1-Year-Old Children. *Pediatrics*, *78*, 585-590.
- MacPhee, W. (1981). *Knowledge of Infant Development Inventory: Human Development and Family Studies*. Colorado: Colorado State University.
- Mrazek, P. J. (1993). Maltreatment and Infant Development. In C. H. Zeanah (Ed.), *Handbook of Infant Mental Health* (pp. 159-170). New York: The Guilford Press.
- Orlebeke, J. F., Knol, D. L. & Verhulst (1997). Increase in Child Behavior Problems Resulting from Smoking During Pregnancy. *Archives of Environmental Health*, *52*(4), 317-321.
- Osofsky, J. D., Hann, D. M., & Peebles, C. (1993). Adolescent Parenthood: Risks and Opportunities for Mothers and Infants. In C. H. Zeanah (Ed.), *Handbook of Infant Mental Health* (pp. 106-119). New York: The Guilford Press.
- Parker, G., Tupling, H., & Brown, L. B. (1979). A Parental Bonding Instrument. *British Journal of Medical Psychology*, *52*, 1-10.
- Reis, J. (1989). A Comparison of Young Teenage, Older Teenage, and Adult Mothers on Determinants of Parenting. *Journal of Psychology*, *123*, 141-151.
- Robins, L. N., Helzer, J. E., Croughan, J., & Ratliff, K. S. (1981). The NIMH Diagnostic Interview Schedule: Its History, Characteristics, and Validity. *Archives of General Psychiatry*, *38*, 381-389.
- Schellenbach, C. J., Whitman, T. L., & Borkowski, J. G. (1992). Towards an Integrative Model of Adolescent Parenting. *Human Development*, *35*, 81-99.
- Serbin, L. A., Peters, P. L., McAffer, V. J., & Schwartzmann, A. E. (1991). Childhood Aggression and Withdrawal as Predictors of Adolescent Pregnancy, Early Parent-

- hood, and Environmental Risk for the Next Generation. *Canadian Journal of Behavioral Science*, 23, 318-331.
- Shaw, D. S., Keenan, K., & Vondra, J. I. (1994). Developmental Precursors of Externalizing Behavior: Ages 1 to 3. *Developmental Psychology*, 30(3), 355-364.
- Shaw, D. S., & Vondra, J. I. (1995). Infant Attachment Security and Maternal Predictors of Early Behavior Problems: A Longitudinal Study of Low-Income Families. *Journal of Abnormal Child Psychology*, 23(3), 335-357.
- Shaw, D. S., Winslow, E. B., Owens, E. B., Vondra, J. I., Cohn, J. F., & Bell, R. Q. (1998). The Development of Early Externalizing Problems Among Children from Low-Income Families: A Transformational Perspective. *Journal of Abnormal Child Psychology*, 26(2), 95-107.
- Smith, C. (1996). The Link Between Childhood Maltreatment and Teenage Pregnancy. *Social Work Research*, 20(3), 131-141.
- Spanier, G. B. (1976). Measuring Dyadic Adjustment: New Scales for Assessing the Quality of Marriage and Similar Dyads. *Journal of Marriage and the Family*, 38, 15-30.
- Sroufe, L. A. (1983). Infant-Caregiver Attachment and Patterns of Adaptation in Preschool: The Roots of Maladaptation and Competence. In M. Perlmutter (Ed.), *Minnesota Symposia in Child Psychology* (Vol. 16, pp. 41-83). Hillsdale, NJ: Erlbaum.
- Straus, M. A. (1980). Stress and Child Abuse. In C. H. Kempe, & R. E. Helfer (Eds.), *The Battered Child* (3rd, Chap. 5). Chicago: University of Chicago.
- Tong, L., Oates, K., & McDowell, M. (1987). Personality Development Following Sexual Abuse. *Child Abuse and Neglect*, 11, 371-383.
- van den Boom, D. C. (1994). The Influence of Temperament and Mothering on Attachment and Exploration: An Experimental Manipulation of Sensitive Responsiveness Among Lower-Class Mothers with Irritable Infants. *Child Development*, 65(5), 1457-1477.
- van IJzendoorn, M. H., Schuengel, C., & Bakermans-Kranenburg, M. J. (1999). Disorganized Attachment in Early Childhood: Meta-Analysis of Precursors, Concomitants, and Sequelae. *Development and Psychopathology*, 11, 225-249.
- Webster-Stratton, C. (1985). Comparison of Abusive and Nonabusive Families with Conduct-Disordered children. *American Journal of Orthopsychiatry*, 55, 59-69.
- Whitman, T. L., Borkowski, J. G., Schellenbach, C. J., & Nath, P. S. (1987). Predicting and Understanding Developmental Delay of Children of Adolescent Mothers: A Multidimensional Approach. *American Journal of Mental Deficiency*, 92, 40-56.
- Zoccolillo, M., Meyers, J., & Assiter, S. (1997). Conduct Disorder, Substance Dependence, and Adolescent Motherhood. *American Journal of Orthopsychiatry*, 67(1), 152-157.
- Zuckerman, B., & Brown, E. R. (1993). Maternal Substance Abuse and Infant Development. In C. H. Zeanah (Ed.), *Handbook of Infant Mental Health* (pp. 143-158). New York: The Guilford Press.

Submitted: September 18, 2000

Revised: June 1, 2001

Revised: January 3, 2002

Revised: August 19, 2002

Accepted: October 31, 2002