ADJUSTMENT PROBLEMS IN THE FAMILY AND SCHOOL CONTEXTS, ATTITUDE TOWARDS AUTHORITY, AND VIOLENT BEHAVIOR AT SCHOOL IN ADOLESCENCE

Gonzalo Musitu Ochoa, Estefania Estévez Lopez, and Nicholas P. Emler

ABSTRACT

This study analyzed the role of different but interrelated variables in the family and school contexts in relation to problems of violent behavior at school during adolescence. Participants were 1,068 students aged 11 to 16 (47% male) drawn from secondary schools in the Valencian Community (Spain). Statistical analyses were carried out using structural equation modeling. The model accounted for 32% of the variance in school violence. Results showed a direct association between quality of communication with father and teacher's expectations of the student with the adolescent's involvement in violent behavior at school. Moreover, findings showed indirect paths by which adolescents' self-concept (family and school domains), acceptance by peers, and attitude toward authority, seemed to be influenced by the quality of interactions with parent and teachers, and also were closely associated with violent behavior at school. Findings are discussed in relation to previous research on adolescent psychosocial adjustment and behavioral problems at school.

Research on behavioral problems of children and adolescents in school has been increasing steadily since the 1980s, probably due to the growing frequency and seriousness of these problems in the United States and some European countries (Skiba, 2000, Smith, 2003). These problems involve both antisocial behavior (theft, vandalism, and damage to school property) and aggressiveness (verbal and physical violence toward teachers and classmates) (Astor, Pitner, Benbenishty, & Meyer, 2002; Herrero, Estévez, & Musitu, in press). Regarding factors that may underlie these problems, previous research from an ecological

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point of view has documented an association between violent behavior in adolescence and adjustment problems in both family and school contexts.

Prior studies examining the association between family variables and violent behavior at school have shown that a negative family environment characterized by problems of communication between parents and children is an important risk factor for the development of behavioral problems in adolescence (Demaray & Malecki, 2002, Estévez, Musitu, & Herrero, 2005a). Recent investigations point out that the quality of communication with parents is closely related to adolescents' behavior and psychological adjustment (Liu, 2003; Stevens, De Bourdeaudhuij, & Van Oost, 2002); in particular, negative and offensive communication with parents may lead to misbehaviors in children (Lambert & Cashwell, 2003; Loeber, Drinkwater, Yin, Anderson, Schmidt, & Crawford, 2000). Another variable is the family self-concept. A negative family self-concept, which is, moreover, strongly associated with a parent-adolescent negative communication style (Jackson, Bijstra, Oostra, L., & Bosma, 1998; Musitu & Cava, 2001; Musitu & García, 2004), has been linked to violence in adolescence (Estévez, Herrero, Martínez, & Musitu, 2006).

Some previous research has also analyzed the relationship between school variables and students' behavioral problems, indicating that adolescents who are violent in school also have more negative interactions with teachers (Blankemeyer, Flannery, & Vazsonyi, 2002; Jack, Shores, Denny, Gunter, DeBriere, & DePapape, 1996; Meehan, Hughes, & Cavell, 2003; Murray & Murray, 2004), have lower levels of school self-concept (Andreou, 2000; Boders, Earleywine, & Huey, 2004; O'Moore & Kirkham, 2001), and in some cases are rejected by peers (sociometric status) (Hay, Payne, & Chadwick, 2004; Rubin, Bukowski & Parker, 1998; Werner, 2004). It also has been shown that violent adolescents generally hold more negative attitudes toward authorities such as the police, the law, school, and teachers (Adair, Dixon, Moore, & Sutherland, 2000; Emler, Ohana, & Dickinson, 1990; Emler & Reicher, 1995). Moreover, recent studies point out important links among these school variables; for instance, adolescents with low socioeconomic status (rejected by peers) tend to have a negative school self-concept (Estévez et al., 2006). Thus, it is possible that some of these factors jointly contribute to the understanding, at least in part, of school violence.

This and other significant questions should be answered if we are to understand the relationship between adjustment problems in the family and school contexts and violent behavior by adolescents. For exam-
pie, very little research has also jointly considered the role of father, mother, and teacher on adolescent behavioral problems. Research has traditionally examined the influence of the mother on a child’s adjustment (Berg-Nielsen, Vika, & Dahl, 2003; Rey, 1995), while recent studies suggest that fathers and mothers may each independently contribute to the explanation for some behavioral problems in children (Veneziano, 2000). Along this line, some authors suggest that the closer association is between positive father-child relationship and adolescents’ psychosocial adjustment (Estévez et al., 2005a,b; Rohner & Veneziano, 2001).

Taking into account these findings from the literature, the main purpose of the present study was to analyze the role of different but interrelated variables in the family and school contexts in relation to problems of violent behavior at school during adolescence. The variables were quality of communication with father and mother and family self-concept; the school variables were interaction with teacher, acceptance/rejection by peers (sociometric status), school self-concept, and attitude toward institutional authority. It was expected that the quality of the relationship between the adolescents and their parents and teachers would be associated with the adolescents’ positive self-concept (in the family and school domains), acceptance by peers, and positive attitudes toward authority, which in turn would be related to lower levels of violent behavior at school.

METHOD

Participants
Participants in the study were 1,068 adolescents attending secondary education in four public schools of the Valencian Community (Spain). Ages ranged from 11 to 16 years (mean age 13.7; s.d. 1.6); 47% were boys and 53% were girls. For multi-group analyses, the sample was split into two age groups corresponding respectively to early adolescence (11-13 years; 45.4% of the total sample) and mid-adolescence (14-16 years).

Procedure
Data for this research were collected as part of a larger study on adjustment problems in adolescence. Several public schools were selected at random, of which four participated in the study mostly based on the willingness of staff to collaborate in the investigation. Following initial contact with head teachers, all teacher staff were informed of
the objectives of the study during a two-hour presentation. At the same time, a letter describing the study was sent to the parents requesting that they indicate in writing if they did not wish their child to participate. (All parents agreed to the participation of their children.) However, both teachers and parents expressed a wish to be informed about the results of the investigation in a meeting with the research team. (This took place once data analyses were completed.) Participants anonymously complete the instruments during a regular class period, with all measures administered on the same day. Finally, teachers were also asked to complete a teacher report for each participating adolescent.

**Measures and Instruments**

The 20-item Parent-Adolescent Communication Scale (PACS; Barnes & Olson, 1982) was administered. Adolescents described communication with their parents on a five-point scale (1 = never, 5 = always). The original scale used a two-factor structure referring to degree of openness and extent of problems in family communication (coefficients alpha .87 and .78; test-retest reliabilities .78 and .77, respectively). However, as with other recent studies (see Feldman & Rosenthal, 2000), we could not replicate this factor structure in our data. Principal component analysis yielded a three-factor structure for father and mother separately. The first factor explained 30.66% of variance, defined by ten items referring to open communication with parents (e.g., “my mother/father is always a good listener”). The second factor explained 21.85% of variance and was defined by six items referring to offensive communication with parents (e.g., “my mother/father insults me when she/he is angry with me”). Finally, the third factor explaining 9.52% of variance was defined by four items referring to avoidant communication with parents (e.g., “I am sometimes afraid to ask my mother/father for what I want”). Cronbach’s alphas for these subscales in the present study were .87, .76, and .75, respectively.

We next used the family and school sub-scales of the Self-Concept Form-A Scale (AFA) (Musitu, Garcia, & Gutiérrez, 1994). The AFA has been widely used in the Spanish population to provide information about the adolescent’s family self-concept (e.g., “I have confidence in my parents”), and school self-concept (e.g., “I’m a good student”), on a 3-point scale (1 = never, 2 = sometimes, and 3 = always). Cronbach’s alphas for these subscales in the present study were .79 and .86, respectively.

Attitude toward Institutional Authority was assessed using a scale adapted from Reicher and Emler (1985). This scale consists of 14 items
rated on a four-point scale (1 = totally disagree, 4 = totally agree") referring to attitude toward teachers and school. This scale showed a two-factor structure using principal component analysis: the first factor (25.74% of variance) was defined by eight items referring to attitude toward school and teachers (e.g., “I agree with what my teachers say and do”, “It is usual to disobey teachers if there is not any punishment,” inverse coded), while the second factor (21.71% of variance) was defined by six items referring to perception of injustice (e.g., “Teachers only take care of students with good marks”). Cronbach’s alphas for these subscales were .77 and .73, respectively.

Using The Violence Behavior Scale (Herrero et al., in press), adolescents indicated the frequency with which they engaged in any of 19 deviant behaviors at school in the last 12 months. This was rated on a six-point scale (0 = I don’t want to share this information, 1 = never, 5 = many times) (e.g., “I got into fights at school”). Approximately 7% of respondents chose the “0” response for some items; these participants were removed from the analysis. Cronbach’s alpha for this scale was .84.

Sociometric Status was assessed using the Sociometric Questionnaire which evaluates the basic structure of relationships in a group. This kind of questionnaire is not standardized, rather, it is prepared by the researcher following specific criteria for the group whose structure of relationships is being studied. In the present study, this scale was used to obtain information about the social structure of interactions between students in the same class. The questionnaire was comprised of 2 items, grouped in accordance with the sociometric criterion of “teamwork.” Participants were asked to give positive selections (“With whom would you prefer to work in a team?”) and negative selections (“With whom would you prefer not to work in a team?”). The method required respondents to nominate three classmates listed in order of preference. The positive and negative nominations received from peers provided indexes of peer acceptance and peer rejection, respectively. Following Croie, Dodge, and Coppotelli’s procedure (1982), an index of social preference named sociometric status, was formed from these positive and negative scores.

To complete the sociometric questionnaire, students were provided a class roster. To preserve anonymity of responses, each name was assigned a number and students were instructed to complete the sociometric questionnaire by writing the numbers instead of the names of classmates. Students were also asked to write their own number on the top of the questionnaire and not to write their name on the response sheets. They were instructed to keep their answers private and were given sheets of paper to cover their responses.
Teacher's Perception of Students is a measure that used an instrument constructed for the present study (LISIS Team, University of Valencia, 2006). In Spanish schools there is a head instructor for each classroom who spends more time with students than other teachers. A total of 44 head instructors filled out the Teacher's Perception of Student Scale in order to estimate, on a ten-point scale (1 = very bad, 10 = very good), levels of (1) adolescent's social integration at school, (2) academic success, and (3) quality of teacher-student relationship for each student in his/her classroom (teachers' response rate: 100%). To complete this scale, all head instructors used the numbers previously assigned to students instead of their names.

With regard to the validity of the measures used in the study, previous research has shown adequate predictive validity for all the scales. For instance, high levels of family and academic self-concept have been shown to predict low levels of psychological distress (Musitu et al., 1994; Musitu & Garcia, 2004). The three dimensions of the Parent-Adolescent Communication Scale have also been found to be significantly associated with several outcomes in the Spanish adolescent population; for instance, Estévez et al. (2005a) found that low scores for open communication and high scores for offensive and avoidant communication were associated with high levels of psychological distress, poor relationship with teacher, and a high level of school-based violent behavior. The Attitude toward Institutional Authority Scale has also shown a close link with high levels of aggression and violence in adolescents (Emler & Reicher, 1995). With regard to the Teacher's Perception of Students Scale, previous work has reported an association between negative teacher's perception of students and behavioral problems at school (Estévez et al., 2005a; Herrero et al., in press).

**RESULTS**

Preliminary correlational analyses among all study variables were carried out (see Table 1). Variables concerning interaction with parents and teachers were significantly associated with adolescents' self-concept, sociometric status, attitude toward institutional authority, and violent behavior at school. Therefore, all these variables were included in the subsequent regression analysis.

We used EQS 6.0 (Bentler, 1995) Structural Equation Program to examine the relationships among all these variables. Santorra-Bentler corrected statistics were considered to account for the non-normality of the data (normalized estimate = 34.894). The model showed a rea-
Table 1

Correlations among Observed Variables

<table>
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<tr>
<th>Variables</th>
<th>1</th>
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<td>-.32***</td>
<td>-.30***</td>
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<td>4. Father-Open communication</td>
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<td>5. Father-Offensive communication</td>
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<td>.19***</td>
<td>-.44***</td>
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<td>6. Father-Avoidant communication</td>
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<td>.68***</td>
<td>-.32***</td>
<td>.25***</td>
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<td>7. Teacher-Relationship with the teacher</td>
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<td>-.06</td>
<td>.05</td>
<td>-.10**</td>
<td>-.05</td>
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<td>8. Teacher-Social integration at school</td>
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<td>-.15***</td>
<td>-.04</td>
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<td>9. Teacher-Academic success</td>
<td>.14**</td>
<td>-.20***</td>
<td>-.05</td>
<td>.12**</td>
<td>-.17***</td>
<td>-.02</td>
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<td>10. Violent Behaviour at school</td>
<td>-.23***</td>
<td>-.23***</td>
<td>.14***</td>
<td>-.18***</td>
<td>-.20***</td>
<td>.12***</td>
<td>-.20***</td>
<td>-.13***</td>
<td>-.27***</td>
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<tr>
<td>11. Attitude towards school and teachers</td>
<td>.27***</td>
<td>-.22***</td>
<td>-.10**</td>
<td>.22***</td>
<td>-.15***</td>
<td>.21***</td>
<td>.26***</td>
<td>.28***</td>
<td>.10**</td>
<td>-.34***</td>
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<td>12. Perception of injustice</td>
<td>-.12***</td>
<td>.16***</td>
<td>.12***</td>
<td>-.09**</td>
<td>.09**</td>
<td>-.14***</td>
<td>-.14***</td>
<td>-.16***</td>
<td>-.21***</td>
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<td>-.29***</td>
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<td>13. Sociometric Status- Acceptance</td>
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<td>.05</td>
<td>.03</td>
<td>.02</td>
<td>.01</td>
<td>.06</td>
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<td>.25***</td>
<td>.38***</td>
<td>-.07</td>
<td>-.04</td>
<td>-.09</td>
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<tr>
<td>14. School Self-Concept</td>
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<td>-.10***</td>
<td>-.14***</td>
<td>.20***</td>
<td>-.17***</td>
<td>-.04</td>
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<td>-.30***</td>
<td>.24***</td>
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<td>15. Family Self-Concept</td>
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<td>-.28***</td>
<td>.42***</td>
<td>-.34***</td>
<td>-.21***</td>
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<td>.25***</td>
<td>-.16***</td>
<td>.07</td>
<td>.34***</td>
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</tbody>
</table>

Note: variables are standardized.

*p < .05; **p < .01; ***p < .001
sonably good fit, as these indexes indicate: CFI = .98, IFI = .98, NNFI = .97, and RMSEA = .038. For the CFI, IFI, and NNFI, values above .95 or higher are acceptable, and for the RMSEA, values above .05 or less are acceptable (Batista & Coenders, 2000). This model examined 32% of variance in Violent Behavior.

Table 2 reports all factor loadings of the observed variables on their latent variables. Open communication, offensive communication, and avoidant communication were used as indicators of the latent variables: Communication with Father and Communication with Mother. Adolescents’ social integration at school, academic success, and relationship with the teacher, were used as indicators of the latent variable: Teacher’s Perception of Student. Attitude toward school and teachers and perception of injustice were used as indicators of the latent variable: Attitude toward Institutional Authority. Finally, because Family Self-concept, School Self-concept, Sociometric Status, and Violent Behavior at School each had only one indicator, the factor loading was 1 with an error of 0.

Figure 1 shows the final structural model with the standardized path coefficients and their confidence intervals. We found correlated errors between communication with father and mother (r = .69, p < .001), communication with father and teacher’s perception of student (r = .20, p < .001), and communication with mother and teacher’s perception (r = .21, p < .001) (these correlations are omitted in the figure).

Results showed communication with father and teacher’s perception follow direct paths (β = -.19, p < .001, β = -.10, p < .001, respectively). This finding suggests that both positive communication with father and teacher’s positive expectations, are factors related to lower levels of violent behavior at school. Moreover, communication with both parents and teacher’s perception also followed indirect paths. On the one hand, open communication with parents (especially with mother) seemed to be closely associated with adolescents’ positive family self-concept (β = .53, p < .001 mother, and β = .19, p < .001 father), which was in turn strongly related to school self-concept (β = .26, p < .001). As the model indicated, school self-concept and positive attitude toward authority are also interrelated factors (β = .47, p < .001) that showed a negative significant relationship with violent behavior at school (β = -.47, p < .001). On the other hand, an indirect path is followed by teacher’s perception, where teacher’s positive expectations about students were strongly associated with peer acceptance (sociometric status) (β = .91, p < .001), which was in turn positively related to school self-concept (β = .50, p < .001).
Table 2
Unstandardized Parameter Estimates, Standard Errors, and Significance Levels

<table>
<thead>
<tr>
<th>Variables</th>
<th>Factor loadings</th>
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<td>Communication with Mother</td>
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<tr>
<td>Open communication</td>
<td>1.321***</td>
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<tr>
<td>(Communication with Mother)</td>
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<tr>
<td>Avoidant communication</td>
<td>-0.734***</td>
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<tr>
<td>Offensive communication</td>
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<tr>
<td>Communication with Father</td>
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</tr>
<tr>
<td>Open communication</td>
<td>1.258***</td>
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<tr>
<td>(Communication with Father)</td>
<td></td>
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<tr>
<td>Avoidant communication</td>
<td>-0.654***</td>
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<tr>
<td>Offensive communication</td>
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<tr>
<td>Teacher’s Perception</td>
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<tr>
<td>Academic success</td>
<td>1.477***</td>
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<tr>
<td>Social integration at school</td>
<td>1.064***</td>
</tr>
<tr>
<td>Relationship with the teacher</td>
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<tr>
<td>Attitude towards Institutional Authority</td>
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<tr>
<td>Perception of injustice</td>
<td>-0.843***</td>
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<tr>
<td>Attitude towards school and teachers</td>
<td></td>
</tr>
<tr>
<td>Violent Behaviour at School</td>
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<tr>
<td>Sociometric Status (acceptance by peers)</td>
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<tr>
<td>School Self-Concept</td>
<td>1 *</td>
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<tr>
<td>Family Self-Concept</td>
<td>1 *</td>
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</table>

Robust statistics. Standard errors are in parenthesis.

* Fixed to 1.00 during estimation.

***p < .001 (two-tailed test)
Figure Caption

Figure 1. Final structural model

Continuous lines represent significant paths among latent variables. Robust standard errors were used to determine the significance of the standardized paths (**p < .01; ***p < .001). Manifest indicators are omitted.
In order to test the measurement and structural invariance of the general model across gender and age groups, we conducted multi-group analyses. Two models were tested for each multi-group comparison. In the first between-group model (unrestricted model) all parameter estimates (factor loadings and structural paths) were freely estimated across groups. In the second (restricted model), each of the factor loadings and structural paths were constrained to be invariant across groups. If the chi-square for the restricted model was significantly larger than the chi-square of the unrestricted model, the assumption of invariance would not be tenable. Results indicated a non-significant difference between these models for age groups: $\Delta \chi^2 (27, N = 1,049) = 38.34, ns$. In the case of gender, a significant difference was found: $\Delta \chi^2 (27, N = 1,049) = 44.16, p < .001)$. Closer inspection of cross-group constraints revealed that 7 out of 27 constraints would significantly decrease $\chi^2$ if released. After releasing these constraints, the unconstrained and the constrained models for gender groups were statistically equivalent $\Delta \chi^2 (27, N =1,049) = 32.97, ns$. Results therefore supported invariance of the general model across gender and age groups.

DISCUSSION

The present study aimed to analyze the role of different but interrelated family and school variables in relation to adolescents' involvement in violent behavior at school. As expected, the quality of the interaction among adolescents, parents, and teachers was associated with levels of violent behavior, both directly and indirectly, through the influence in adolescents' self-concept, sociometric status, and attitude toward formal authority. When examining the direct relationships regarding communication with father and mother and teacher's perception, we found two significant direct and negative associations. In these respects, our results suggested that the positive family-child communication, as well as the teacher's positive expectations of students, may be protective factors in relation to development of problems of violent behavior at school. These finding are in line with those recently reported by Rohner and Veneziano (2001) and by Welsh et al. (2004), who have emphasized the close link between quality of father-child relationship and adolescents' adjustment. Some previous studies have also revealed an association between violent behavior at school, problems of interaction with teachers, and teachers' negative perception of students (Estévez et al., 2005a; Murray & Murray, 2004).
Furthermore, the structural model calculated showed two indirect paths, one relating to parents and the other to teachers. Regarding parents, we found a link between open communication with both father and mother and adolescents' positive family self-concept, which in turn was related to positive school self-concept. This finding is consistent with those reporting that positive family communication between parents and children is associated with adolescents' psychological well-being, high levels of self-esteem, and positive self-concept in different domains (Estévez et al., 2005b; Fletcher, Steinberg, & Sellers, 1999; Jackson et al., 1998).

With regard to teachers' perceptions, results indicated the existence of a strong relationship between these perceptions and sociometric status in the classroom, while the latter was in turn also associated with school self-concept. This finding suggests that a positive evaluation by the teacher is related to high social status for the student (popular and liked by peers) and, moreover, that students who are perceived positively by both teacher and classmates exhibit higher levels of school self-concept. In contrast, when teachers have more negative perceptions of students, it is closely linked to low sociometric status (students are rejected and disliked by peers), in turn leading to low levels of school self-concept. As recent studies have indicated, teachers may affect social relationships in the classroom since teachers' beliefs, expectations, and perceptions may influence students' beliefs, expectations, and peer preferences in relation to classmates (Birch & Ladd, 1998; Trouilloud, Sarrazin, Martinek, & Guillet, 2002; Zettergren, 2003). Furthermore, it has been found that students with low social status in the classroom normally show lower levels of school self-concept (Hymel, Bowker, & Woody, 1993; Ladd, 1999).

School self-concept appeared to have a strong association with students' attitudes toward institutional authority; in other words, adolescents who obtained lower scores for school self-concept showed less respect toward school and teachers and perceived more injustice at school. In a recent study, Levy (2001) found a similar trend in self-concept and attitude toward authority scores in a sample of adolescents. Nevertheless, the relationship among students' attitude and the different dimensions of self-concept has hardly been considered in research focused on adolescent violent behavior at school, while the scant data we have from the scientific literature suggest that these variables may jointly explain, at least in part, behavioral problems in the school context (Haynes, 1990).

The relationship between attitude toward institutional authority and violent behavior in adolescence has been more extensively docu-
Adolescents who show behavioral problems at school express a more negative attitude toward formal authority figures and institutions, such as teachers and the school (Emler & Reicher, 1995, 2005; Adair et al., 2000). This negative attitude, as our results also indicated, seems to be a very important risk factor in the development of behavioral problems (Hoge, Andrews, & Lescheid, 1996; Loeber, 1996). However, attitude towards institutional authority may also be a protective factor, since a positive attitude to school and teachers has been positively related to behavioral adjustment in adolescence (Moncher & Miller, 1999; Thornberry, 1996).

Finally, the following limitations are acknowledged. Although data in the present study were collected from different sources (adolescents, their classmates, and their teachers), many of the measures used are self-reported and response bias may impact the validity and generalizability of the findings. It would be desirable, therefore, in future research, to obtain additional data from parents (for example, regarding perception of family communication) in order to better understand the associations analyzed in this study. Moreover, since the present study used a cross-sectional design, caution is justified in making a causal inference on the basis of the data available. For instance, there is ample evidence for both causal directions of attitude-behavior relations (Holland, Verplaken, & van Knippenberg, 2002). Greater confidence in the causal direction of influences would require a longitudinal study.

REFERENCES


