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Parenting and Antisocial Behavior: A Model of the Relationship Between Adolescent Self-Disclosure, Parental Closeness, Parental Control, and Adolescent Antisocial Behavior

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This study used data collected from a sample of 840 Italian adolescents (418 boys; *M* age = 12.58) and their parents (657 mothers; *M* age = 43.78) to explore the relations between parenting, adolescent self-disclosure, and antisocial behavior. In the hypothesized model, parenting practices (e.g., parental monitoring and control) have direct effects on parental knowledge and antisocial behavior. Parenting style (e.g., parent–child closeness), on the other hand, is directly related to adolescent self-disclosure, which in turn is positively related to parental knowledge and negatively related to adolescents' antisocial behavior. A structural equation model, which incorporated data from parents and adolescents, largely supported the hypothesized model. Gender-specific models also found some gender differences among adolescents and parents, as the hypothesized model adequately fit the subsample of mothers but not fathers. Mothers' closeness to girls predicted their knowledge of their daughters' behavior; mothers' control predicted boys' antisocial behavior.

Keywords: parenting, monitoring, self-disclosure, deviant behavior, early adolescence

Numerous studies have examined the role parenting plays in the cause and prevention of adolescent antisocial behavior. These studies suggest that some aspects of parents' behavior are associated with adolescent problem behavior (e.g., L. G. Simons & Conger, 2007). These studies, along with Patterson's studies of juvenile delinquency (Patterson, 1982; Patterson, Reid, & Dishion, 1992), indicate that parental knowledge of adolescents' whereabouts and activities is an important predictor of antisocial behavior. Parental knowledge has often been conceptualized as primarily a function of parenting practices, such as parental monitoring (e.g., soliciting information from an adolescent) and parental control (e.g., requiring information prior to granting permission; for a review see Crouter & Head, 2002). That is, active parent involvement, through solicitation and control, increases parental knowledge, which ultimately acts as a protective factor against poor psychosocial outcomes for adolescents. Despite the numerous studies linking parental knowledge and adolescent outcomes (e.g., Darling, Cumsille, Caldwell, & Dowdy, 2006; Dishion & McMahon, 1998; Fletcher, Steinberg, & Williams-Wheeler, 2004; Patterson & Stouthamer-Loeber, 1984; Soenens, Vansteenkiste, Luyckx, & Goossens, 2006), questions remain about how these constructs are connected.

Recent studies have questioned the assumption that parental knowledge is primarily a byproduct of parental practices. Indeed, parents may receive information about their adolescent's activities through (a) asking their adolescent, (b) limiting or controlling their adolescent's activities, or (c) the adolescent's self-disclosure (Kerr & Stattin, 2000). Kerr and Stattin (2000) suggested that parental knowledge may be more related to individual differences in adolescent self-disclosure than the result of parental practices (see also Stattin & Kerr, 2000). One implication of their research is that parental control and monitoring may both be positively associated with parental knowledge, yet these are clearly different constructs. In fact, they have suggested that specific parenting behaviors, such as soliciting information from the adolescent, may be relatively unimportant in determining levels of parental knowledge. A second implication is that parenting style, as indicated by the emotional climate of the relationship, may be more important in establishing a relational context in which adolescents feel comfortable sharing information, thereby increasing parental knowledge. The purpose of this study is to examine the relationship between parenting practices, parenting style, and adolescent self-disclosure, using a sample of Italian middle school students.

Subsequent studies (Darling et al., 2006; Fletcher et al., 2004; Laird, Pettit, Bates, & Dodge, 2003; Smetana, Crean, & Daddis, 2002; Soenens et al., 2006) have continued to explore Kerr and Stattin's (2000; Stattin & Kerr, 2000) hypotheses. For example,

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Soenens et al. (2006) argued that the relation between parenting behaviors and adolescent self-disclosure is more complex because the relation between parenting practices and adolescent disclosure has to be considered in the broader context of the quality of the parent–child relationship. Through structural equation modeling, Soenens et al. demonstrated that self-disclosure mediated the relations between parenting practices (monitoring and control) and parental knowledge, which in turn was related to antisocial behavior and affiliation with peers engaging in problem behavior.

Reviews of Kerr and Stattin (2000; Stattin & Kerr, 2000), along with subsequent studies, suggest that their conclusions may be limited by the data sources, analysis strategies, and sample characteristics. Specifically, some of these studies used single data sources (either the parent or the adolescent). Fletcher et al. (2004), for example, used only adolescent self-reports of these measures. In studies where information was available from both parents and children, such as Soenens et al. (2006), the information was analyzed separately. Thus, the association between variables might be partly a methodological artifact. Another limitation is that the majority of related studies have focused on middle and late adolescence (from 14 to 21 years of age). However, early adolescence is a critical period in the development of many risk behaviors (Moffitt, Caspi, Dickson, Silva, & Stanton, 1996). Further, although peers may become a more important reference group in shaping adolescent behaviors (Brown, Mounts, Lamborn, & Steinberg, 1993; Meeus & Dekovic, 1995), numerous studies show that the parent–child relationship remains important for the psychosocial adjustment of young adolescents (e.g., M. B. Simons, Chen, Abroms, & Haynie, 2004; R. L. Simons, Chao, Conger, & Elder, 2001; Snyder & Huntley, 1990). Some have even suggested that early adolescence is the key period in which a trajectory is set for future behavior problems (Pettit, Bates, Dodge, & Meece, 1999).

In addition, a majority of these studies did not address whether the relationships between parental monitoring, self-disclosure, and antisocial behavior differ according to a child's gender. For example, Gorman-Smith and Loeber (2005) found that parental monitoring was an important predictor of delinquency for both adolescent boys and girls. Others (e.g., Scaramella, Conger, & Simons, 1999; Spoth, Neppl, Goldberg-Lillehoj, Jung, & Ramisetty-Mikler, 2006) have found that a positive relationship with parents is associated with fewer social and behavioral problems for both genders. The emerging literature on the relationship between child self-disclosure and parental knowledge is inconclusive with respect to the impact of gender; some studies found no gender differences (Soenens et al., 2006), and others reported different patterns for males and females (Crouter & Head, 2002). In general, studies suggest that male adolescents tend to self-disclose less frequently to parents about risky behaviors (e.g., sexual behavior; Consedine, Sabag-Cohen, & Krivoshekova, 2007), raising the question of whether Kerr and Stattin's (2000; Stattin & Kerr, 2000) model and subsequent models that include self-disclosure are gender specific.

Even fewer studies have examined the relation between parental monitoring and self-disclosure based on parents' gender. However, several studies suggest that there are differences in the parenting styles of mothers and fathers and that some of these differences may be evidenced in their children's delinquent behavior. For example, maternal and paternal differences have been observed in aspects of child rearing such as emotional sensitivity and structuring of children's play (Lovas, 2005). In relation to parenting style, L. G. Simons and Conger (2007) observed that fathers were less likely to practice authoritative parenting. Also, studies of single parents show that parents' gender is a significant predictor of adolescents' involvement in alcohol and drug use (Hoffman & Johnson, 1998). In fact, Demuth and Brown (2004) found that single fathers had higher family incomes but were less involved and provided less supervision and monitoring; these differences were associated with more antisocial behavior. Although their study was conducted on a U.S. sample, the mother–father differences are consistent with the parental roles in many Italian families (Claes et al., 2005), where fathers are more likely to be more involved in managing the economic wellbeing of the family than in child rearing (Ramella & Sindoni, 1997).

Most studies examining adolescent self-disclosure have not examined the differences between parents' gender. Those that have examined parental gender differences have provided mixed results. Soenens et al. (2006) examined parent reports and child reports in separate models. They found that their model fit equally well for maternal and paternal behavior based on both parent and adolescent reports. On the other hand, Smetana, Metzger, Gettman, and Campione-Barr (2006) found that adolescents were more willing to disclose to mothers than to fathers, which suggests that mothers may be more likely to have knowledge of their adolescents' behavior.

The Present Study

The results across previous studies and the emerging questions related to parental knowledge and adolescent behavior indicate the need for additional studies. Indeed, if researchers are to understand why these constructs are associated with poor adolescent outcomes, it is essential to understand the relations between these constructs. The principal aim of the present study is to test and extend the integrated model of parenting and adolescent behavior problems determined by Soenens et al. (2006). We do this by exploring the direct and indirect associations between parental control, closeness of parent–child relationship, adolescents' willingness to self-disclose, and their collective relation with parental knowledge and antisocial behavior (see Figure 1). Furthermore, we examine whether the association between these constructs differs as a function of both parent and child gender. Finally, in contrast to Soenens et al., we analyze both parent and child data in a single model, as opposed to separate models for child and parent data. When models are run separately (for child and parents), significant predictions are likely. However, the association between variables may be partially due to a methodological error. Researchers (e.g., Bartels et al., 2004; Cook & Goldstein, 1993) have suggested that structural equation modeling could be used to address this limitation. Thus, we address this issue by combining parent and adolescent information when considering parental control and parent–child closeness to create a latent construct.

According to our model, adolescents who have close relationships with their parents and are exposed to more parental control should be more likely to disclose, in part because of synergy between parenting style and parenting practices. Kerr and Stattin (2000; Stattin & Kerr, 2000) implicitly conceptualized parental knowledge as a byproduct of parental practices or specific behaviors designed to accomplish the goal of increasing parental knowl-

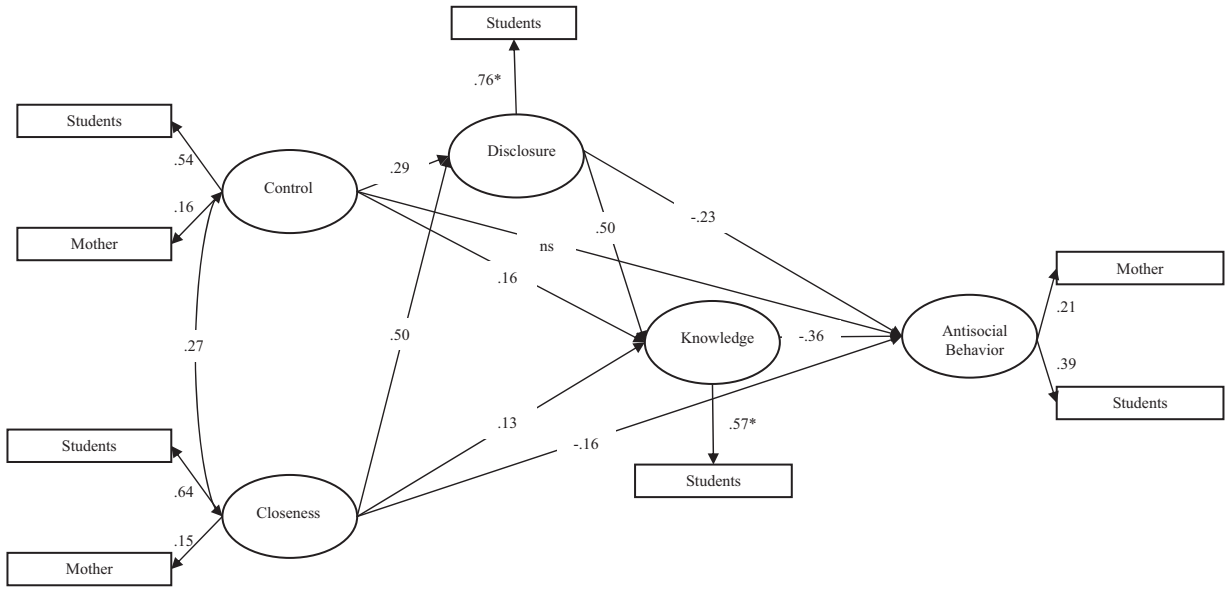

Figure 1. Standardized path coefficients for the model proposed by Soenens et al. (2006) for mothers. $\chi^2(13) = 53.11$, $p < .01$, comparative fit index = .97, normed fit index = .96, non-normed fit index = .93, root-mean-square error of approximation = .06 (.05–.08). * We assigned the fixed value .15 times the variance of *y* to the corresponding parameter theta-epsilon (Jöreskog & Sörbom, 1996a, p. 196).

edge. However, Darling and Steinberg (1993) suggested that socializing adolescents into parental goals and values is a byproduct of parenting practices and parenting style, where parenting style is a more general set of behaviors that establishes an attitude toward the child and sets the emotional climate or closeness of the relationship. Depending on the context established by the parental style, identical parental practices, such as those related to parental control, may be experienced very differently by an adolescent as either caring concern or an intrusion.

This line of thinking suggests that if parents' styles are such that they are involved and cultivate close relationships with their adolescents, the adolescents may in turn feel that their parents are entitled to more information about their unsupervised activities; therefore, these adolescents may spontaneously offer information and respond more favorably to parental control. Thus, parental control can have a direct effect on problem behavior by limiting the opportunities for adolescents to engage in problem behaviors and indirect effects depending on whether adolescents are comfortable disclosing their whereabouts and activities to parents. This is consistent with Kerns, Aspelmeier, Gentzler, and Grabill (2001), who found that when it comes to adolescent self-disclosure, parental warmth, responsiveness, and availability predict higher levels of parental knowledge than parental control.

Our model extends previous models by exploring an early adolescent sample and by including both parent and child ratings of the closeness of their relationship. More importantly, we examine a model that proposes the relation between parenting and adolescent engagement in antisocial behavior is direct or indirect, depending on whether the focus is on the practices associated with parental control or on parental style as indicated by the closeness of the parent–child relationship. As illustrated in Figure 1, we hypothesize that the effect of parent–child closeness on antisocial behavior is primarily indirect and is mediated through adolescent self-disclosure. Parental control, on the other hand, has direct effects on adolescent antisocial behavior. However, this direct relation is complemented by an indirect relation through adolescent self-disclosure. That is, the overall effect of parental control on adolescent problem behavior is enhanced when adolescents disclose their behavior. Although we may find gender differences in the amount of self-disclosure, we believe that the impact of self-disclosure will be similar regardless of gender (similar to Gorman-Smith & Loeber, 2005).

A significant implication of this model is that the connection between parental knowledge and adolescent problem behaviors may be spurious. More specifically, we suggest that parental knowledge is an indicator of the effectiveness of parental style and practices. We further suggest that there is no inherent power in parents knowing what their adolescents are doing. If both adolescent self-disclosure and parental knowledge reflect the quality of the parent–child relationship, parental knowledge may be less important or appear unimportant in predicting adolescent behavior problems in models that contain both constructs.

Finally, we extend previous research by examining these questions using an Italian sample. Claes, Lacourse, Bouchard, and Perucchini (2003) reported that, compared with North American and North European youth (where the majority of research has been conducted), Italian youth reported higher levels of conflicts but also warmer relationships with their parents. Moreover, North American and North European adolescents reported that their parents more often adopted an interactive style (discussion) when rules were not respected, whereas Italian youths more frequently named punitive reactions from their parents in such situations. Because parental practices are often shaped by culture (Goodnow, 1985), an Italian sample provides an important opportunity to

examine the relationship between these constructs in a culturally specific context.

Method

Sample

The present study was conducted in Padova, a midsize city in the northeast of Italy. A total of 1,196 students were enrolled in the sample schools; 35 of them did not regularly attend school. Therefore, the total possible sample was 1,161. Parental permission to participate was obtained for 1,157 students. Of those, 1,147 early adolescents (588 boys and 559 girls) participated in the study.

Parents received one questionnaire. We invited parents to decide if the mother or father would complete the survey. Eighty-four percent ($N = 959$) of parents agreed to participate. Of the 959 parent participants (84% of the total sample), 742 (77.3%) were mothers, 210 (21.9%) were fathers, and 7 (0.8%) were the adolescents' grandparents or adult siblings (M age = 42.78, $SD = 5.19$). Due to their small numbers, surveys completed by grandparents or adult siblings were removed from the analyses.

Analysis Sample

Because some parents did not respond to the questionnaire ($N = 188$) and some of the children and parents ($N = 119$) were missing data required by the imputation procedure (see *Statistical Analyses*), the theoretical model was tested on a final sample of 840 adolescents and their parents. Ages of students (418 boys and 422 girls) ranged from 11 to 15, with a mean of 12.58 ($SD = .93$). Frequency distributions by grade showed that a total of 310 students were in the sixth grade (36.9%), 249 in the seventh grade (29.5%), and 281 in the eighth grade (33.6%). Participants were predominantly born in Italy (95.3%), with small percentages of participants from Eastern Europe (2.5%) and North Africa (1%), and the remainder coming from Asia, the United States, and Western Europe. In relation to the family structure, 91.4% of the students came from a two-parent family (with parents married and living together), 4.1% lived in a stepfamily, and 4.5% lived with one parent (mainly the mother).

Of the 840 parents (M age = 43.78), 657 were mothers. Mothers' mean age was 42.07 years ($SD = 4.97$). On an 8-point rating scale, their mean educational level was 4.27 ($SD = 1.47$), indicating that they had at least 11 years of education on average. Fathers' mean age was 45.49 years ($SD = 4.99$). Their mean educational level was 4.55 ($SD = 1.47$), indicating that they had 13 years of education on average. Compared to the excluded sample, the analysis sample was equally distributed in terms of students' gender, $\chi^2(1) = 1.81$, *ns*, and age, $t(1142) = 0.69$, *ns*.

Given the way mothers and fathers were recruited into the study, we also compared the percentage of boys (78.6%) and girls (76.7%) whose mother participated. No differences were found, $\chi^2(1) = 1.09$, *ns*. Also, we found no differences related to mothers' and fathers' education, $t(920) = 2.13$, *ns*, or to the youths' age, $t(920) = 1.43$, *ns*.

Finally, because we required parental participation and active parental consent, it is possible that the youth included in the analysis may differ systematically from those who were excluded (Weinberger, Tublin, Ford, & Feldman, 1990). For this reason, we used a t test to compare participants to students who were excluded because their parents did not participate in the study. Overall, we did not find any differences in terms of parental control, $t(1153) = 1.10$, *ns*; mothers' closeness, $t(1076) = 0.12$, *ns*; fathers' closeness, $t(1067) = 0.04$, *ns*; self-disclosure to mother, $t(1134) = 2.72$, *ns*; self-disclosure to father, $t(1109) = 0.67$, *ns*; mothers' knowledge, $t(1129) = 3.80$, *ns*; fathers' knowledge, $t(1105) = 1.66$, *ns*; and adolescents' antisocial behavior, $t(1153) = 0.77$, *ns*.

Procedure

The present study was approved by the institutional review committee at the University of Padova. Parents of all sixth, seventh, and eighth grade students (from five public middle schools) were asked for their consent to participate and for their permission to allow their children to participate in the study.

Students filled out their portion of the questionnaire during a single class period. Data were collected during a 4-week period and were proctored by research assistants. Students were given approximately 50 min to complete the questionnaire.

The parent's questionnaire was given to the student in a sealed envelope. In addition to the questionnaire, the envelope contained basic information and instructions for completing and returning the survey in a sealed envelope. Each child returned a sealed envelope to the teacher, containing either the completed survey or the parents' decision not to participate.

Measures

Questionnaires for both youths and parents were composed of measures of parenting (closeness and control) and antisocial behavior taken from international literature and translated, piloted, and validated in Italian. Using a procedure similar to Stattin and Kerr (2000), we investigated self-disclosure and parental knowledge via the questionnaire administered to students.

Parent–child closeness. The Closeness to Parents Scale (Buchanan, Maccoby, & Dornbusch, 1991; Vieno, 2006) was used by adolescent participants to rate their closeness to both their mother and father. The scale was composed of nine items to rate each parent (e.g., "How often does your [mother/father] express affection or liking for you?"). The participants responded on a scale ranging from 1 (*not at all*) to 5 (*often*). The Cronbach's alpha reliability for the nine-item scale was .86 for mothers (bootstrap 95% CI [.83, .88]) and .90 for fathers (bootstrap 95% CI [.88, .92]). Responses were averaged for the measures of mother– and father–child closeness (child report).

Parents responded regarding their own behavior in terms of their willingness to listen to and share feelings and experiences with their children (Child Rearing Practices Report [CRPR]; Rickel & Biasatti, 1982). The questionnaire was composed of 10 items (e.g., "I joke and play with my child"). Parents responded on a scale ranging from 1 (*not at all descriptive of me*) to 5 (*highly descriptive of me*). The alpha for the 10-item scale was .87 (bootstrap 95% CI [.84, .90]). Responses were averaged for the measure of parent–child closeness (parent report).

Parental control. Parental control was measured by a proxy, conceptualized in accordance with Fletcher et al. (2004) to assess the extent to which decisions regarding key areas of adolescents' lives were made by parents, rather than by adolescents themselves.

Ten items were drawn from a scale developed by Steinberg (1987) to assess the level of decision-making autonomy and were then used to approximate parental control over different activities and behaviors (e.g., "Which friend I spent time with" and "How I spend my money"). The participants responded on a 5-point scale: (a) "I decide this without discussing it with parents"; (b) "I make the final decision after discussing it with my parents"; (c) "My parents and I make the decision together"; (4) "My parents make the final decision after discussing it with me"; and (d) "My parents decide this without discussing it with me." The 10 items were averaged to yield a single scale with an alpha of .76 (Child Report; bootstrap 95% CI [.72, .79]).

Parents rated the same items with respect to their parenting behavior. The Cronbach's alpha for the 10-item scale was .73 (bootstrap 95% CI [.69, .77]). Responses were averaged for the measure of parental control (Parent Report).

Adolescents' self-disclosure. Adolescents answered four items relating to their voluntary self-disclosure (two for father and two for mother). These items composed the self-disclosure subscale of the monitoring scale proposed by Small, Silverberg, and Kerns (1993) to distinguish between monitoring, knowledge, and self-disclosure. The four items were as follows: "I spontaneously tell my [mother/father] which friends I hang out with before I go out" and "I spontaneously tell my [mother/father] how I hang out with my friends before I go out." The participants responded on a scale ranging from 1 (*never*) to 4 (*always*). The correlation for the two-item scale was $r = .45$ for mothers (bootstrap 95% CI [.43, .48]) and $r = .61$ for fathers (bootstrap 95% CI [.56, .66]). Responses were averaged for the measures of adolescents' self-disclosure to their mothers and fathers (Child Report).

It should be noted that this operationalization of self-disclosure only partially overlaps with the measure used by Stattin and Kerr (2000). This decision was made for two reasons. First, in the initial stage of the study (Vieno, 2006), we found no variability on the two items concerning a night out. This is likely because of the early stage of adolescence considered in the present study (*M* age = 12.58). On the other hand, we found problems with the reverse coded item, "Do you keep a lot of secrets from your parents about what you do during your free time?" For this reason, in the second stage of the study we decided to assess disclosure using the two items mentioned, as they are essentially the same subscale presented by Small et al. (1993).

Parental knowledge. Adolescents answered four items (two for father and two for mother) concerning the level of knowledge they offered to parents about their free- time activities. The items used are the parental knowledge subscale of the monitoring scale proposed by Small et al. (1993). The four items were as follows: "My [mother/father] knows where I spend my free time after school" and "My [mother/father] knows where I go when I go out." The participants responded on a scale ranging from 1 (*never*) to 4 (*always*). The correlation for the two-item scale was $r = .46$ for mothers (bootstrap 95% CI [.44, .49]) and $r = .62$ for fathers (bootstrap 95% CI [.55, .65]). Responses were averaged for the measures of knowledge among mothers and fathers (Child Report). It should be noted that the implementation of this measure was modified for the same problems encountered for the self-disclosure measure.

Adolescents' antisocial behavior. An adapted version of the self-report measure of antisocial behavior (Kiesner, 2002; Vieno, 2006) was used to measure antisocial behavior among youths. The scale was composed of 11 items (e.g., "How many times did you take money from your parents without their permission?"). Participants were asked to respond by considering their actions within the past 30 days. The answer options were based on a 6-point ordinal scale, ranging from 1 (*never*) to 6 (*more than 20 times*). The Cronbach's alpha for this scale was .78 (bootstrap 95% CI [.74, .81]). Responses were averaged for the measure of antisocial behavior among adolescents (Child Report).

Parents rated 11 items from the Problem Checklist (PLST; Oregon Social Learning Center, 1997) with respect to their child's misbehavior. Parents responded on a scale ranging from 1 (*never*) to 6 (*always/almost always*). The alpha for the 11-item scale was .83 (bootstrap 95% CI [.81, .84]). Responses were averaged for the measure of antisocial behavior among adolescents (Parent Report).

Statistical Analyses

Before running the analyses, we performed data normalization and imputation of missing values for all variables. Imputation of missing values and computation of normal scores were performed using PRELIS 2, based on a scheme described by Jöreskog and Sörbom (1996b, pp. 153–156) and a formula reported by Jöreskog, Sörbom, du Toit, and du Toit (2000, pp. 161–162). The missing values were imputed based upon values observed in other cases that had a similar response pattern over a set of matching variables. Consequently, if there were also missing values for the matching variables, the value could not be imputed. Thus, the cases excluded were eliminated because so many data for these cases were missing that a value could not be imputed.

Structural equation modeling (Jöreskog & Sörbom, 1996a), implemented by the program LISREL (Version 8.50), was used to test model fit separately for mothers and fathers. To address some of the limitations in previous research (e.g., Soenens et al., 2006), we used both parent and adolescent informants to create a latent construct for parent–adolescent closeness and parental control, as well as antisocial behavior; we used only information from student informants to create latent constructs for self-disclosure and parental knowledge.

We considered a variety of indices as indicators of the model's overall goodness of fit: Chi-square (χ^2), for example, was used as a test of the null hypothesis that the model fit the data. However, reliance on chi-square has been criticized, especially in the case of large samples (more than 200; Jöreskog & Sörbom, 1996a; Saris, 1982). For that reason, we also used the comparative fit index (CFI) and non-normed fit index (NNFI), with values ranging from 0 (a poor fit) to 1 (a perfect fit). We also used the root-mean-square error of approximation (RMSEA), which is considered a measure of a good fit when lower than .06 (Hu & Bentler, 1999), and 90% CI for RMSEA. Finally, we examined the squared multiple correlations for the structural equations.

To evaluate child gender differences in the model, a multigroup approach was used (Jöreskog & Sörbom, 1996a; see, e.g., Byrne, 1989). This approach allows estimation of the fit of the model and the parameters simultaneously on different subgroups. In particular, the hypothesis of the invariance of the covariance matrix (Σ) and the hypothesis of the form invariance (same dimensions and same patterns of fixed, free, and constrained values in all matrices; *k*) on different groups tested the fit and parameters of the model comparing boys and girls.

Results

Descriptive Statistics

Table 1 illustrates descriptive statistics for the subsample of fathers and mothers on which we tested the models. The table shows bivariate correlations among variables for the two subsamples and separates means and standard deviations by students' gender. Similar to previous studies (see Kerr & Stattin, 2000), boys scored higher on antisocial behavior on the basis of self- and parental reports. Compared with girls, boys perceived more control from their fathers; girls perceived more control from their mothers. Boys scored higher on closeness to mother and on mother's control (both child and parent report). Girls scored higher on self-disclosure to mothers and mothers' knowledge. In the case of fathers, in general the correlations were small but in the expected direction. Although the correlation between all the indicators of the same constructs measured on the children and parents was significant, the magnitude was relatively low, ranging from .18 to .27 for fathers and from .24 to 34 for mothers. These results are generally consistent with the results obtained by Soenens et al. (2006) and Stattin and Kerr (2000).

Testing the Theoretical Model for Mothers

Analyses began by testing the proposed model (Figure 1) in which all paths among the variables were assessed. One path coefficient, from closeness to antisocial behavior, was not significant. Figure 1 represents the tested model with estimated standardized parameters. Nonsignificant paths are indicated by *ns*.

The resulting model for mothers produced these fit indices: $\chi^2(13) = 53.11$, $p < .01$, CFI = .97, NNFI = .93, RMSEA = .06 (.05–.08). Observing the indices, it is possible to conclude that the model produces an adequate fit. Moreover, the squared multiple correlations for a structural equation are: $R^2_{\eta 1} = .41$, $R^2_{\eta 2} = .44$, $R^2_{\eta 3} = .46$, where $\eta 1$ is disclosure, $\eta 2$ is knowledge, and $\eta 3$ is antisocial behavior. Thus, the model accounts for 41% of the variance in adolescent disclosure, 44% of parental knowledge, and 46% of variance in antisocial behavior. Moreover, the global R^2 for the model was .47.

To more adequately evaluate how well the theoretical model fit the data, we conducted a series of incremental fit tests to compare the model obtained with other alternative models within a nested model comparison framework (Bentler & Bonnet, 1980; Bollen, 1989; Ge, Conger, Lorenz, & Simons, 1994). The following four theoretically meaningful models were compared: baseline, bivariate (two gammas), no beta (four gammas), and the hypothesized model:

1. The baseline is a null-gamma and beta model in which only the measurement model is estimated and all the structural coefficients are assumed to be zero (that is, we assume that all the constructs are orthogonal).

2. A bivariate model (two gammas) is a model that is traditionally employed in research on parenting and adolescent antisocial behavior: Adolescents' antisocial behavior was predicted by parental control and mother–child closeness, but adolescents' disclosure and mothers' knowledge were isolated.

Table 1
Means, Standard Deviations, t Values for Gender, and Correlations Between Variables Separated for Mother and Father (Mother Above the Diagonal)

Variable	1	2	3	4	5	6	7	8	Girls *M* (*SD*)	Boys *M* (*SD*)	*t* values (*df* = 656)
1. Parent–child closeness (CR)	—	.34**	.19**	.10*	.47**	.38**	−.31**	−.22**	4.16 (0.71)	4.15 (0.67)	0.05
2. Parent–child closeness (PR)	.18*	—	.12**	.10*	.16**	.13**	−.10*	−.26**	4.45 (0.53)	4.57 (0.48)	9.75**
3. Parental control (CR)	.15*	.04	—	.32**	.37**	.35**	−.30**	−.04	2.30 (0.52)	2.38 (0.65)	3.35*
4. Parental control (PR)	.05	−.13	.23**	—	.08*	.09*	−.09*	.03	2.58 (0.45)	2.67 (0.48)	5.90*
5. Adol. self-disclosure (CR)	.51**	.25**	.26**	.07	—	.55**	−.44**	−.16**	2.97 (0.77)	2.80 (0.86)	7.33**
6. Parental knowledge (CR)	.41**	.11	.27**	.40	.68**	—	−.48**	−.16**	3.65 (0.56)	3.47 (0.65)	13.43**
7. Adol. antisocial behavior (CR)	−.24**	−.14	−.27**	.09	−.38**	−.29**	—	.24**	1.30 (0.39)	1.50 (0.53)	28.61**
8. Adol. antisocial behavior (PR)	−.17**	−.27**	−.05	.06	−.20**	−.28**	.27**	—	2.11 (0.64)	2.30 (0.64)	13.22**
	M (*SD*)	*M* (*SD*)	*M* (*SD*)	*M* (*SD*)	*M* (*SD*)	*M* (*SD*)	*M* (*SD*)	*M* (*SD*)			
Females	3.92 (0.75)	4.32 (0.61)	2.28 (0.51)	2.58 (0.47)	2.66 (1.00)	3.17 (0.86)	1.25 (0.27)	1.98 (0.57)			
Males	4.07 (0.76)	4.25 (0.70)	2.32 (0.56)	2.75 (0.45)	2.66 (0.92)	3.06 (0.92)	1.43 (0.42)	2.14 (0.64)			
t values (*df* = 182)	1.68	0.56	0.24	6.19**	0.01	0.72	12.10**	2.92*			

Note. CR = child report; PR = parent report; adol. = adolescent.
* $p < .05$. ** $p < .01$.

3. A no-beta model (four gammas): Adolescents' antisocial behavior and disclosure and mothers' knowledge were predicted by both parental control and mother–child closeness, but no betas are included.

4. Our hypothesized model, as presented in Figure 1, postulates a mediating process linking parenting (control and closeness), adolescents' disclosure and mothers' knowledge, and adolescent antisocial behavior.

The results of the comparisons across these models are presented in Table 2.

First, the bivariate model (parenting predicting adolescent antisocial behavior) provided a better fit with the data than the baseline model. The coefficients in Table 2 show a significant reduction in χ^2 with three degrees of freedom ($\Delta\chi^2 = 299.52$). By adding adolescent disclosure and mothers' knowledge constructs into our estimation (just as a predictor and not as a mediating factor), the model produced a significant improvement over the bivariate model ($\Delta\chi^2 = 605.77$). Finally, over the no-beta (four gammas) model, a significant improvement was found by adding the connection (betas) between adolescents' disclosure and mothers' knowledge and adolescent antisocial behavior ($\Delta\chi^2 = 35.94$). In observing the remaining fit indices, both NNFI and CFI seem to show a gradient in which there is a substantial and continuous fitness improvement from the baseline to the hypothesized model.

Testing the Theoretical Model for Fathers

Analyses began by testing the proposed model (Figure 1) in which all paths among the variables were assessed. The resulting model for fathers did not produce an adequate fit: $\chi^2(13) = 43.48$, $p < .01$, CFI = .89, NNFI = .80, RMSEA = .11 (.08–.15).

To examine where the problem occurred with the model for fathers, we conducted a series of incremental fit tests to compare the model obtained with other alternative models within a nested model comparison framework. Again, four theoretically meaningful models were compared in the tests: baseline, bivariate (two gammas), no beta (four gammas), and the hypothesized model. The results of the comparisons across these models are presented in Table 3.

First, the bivariate model (parenting predicting adolescent antisocial behavior) provided a better fit with the data than the baseline model. The coefficients in Table 3 show a significant reduction in χ^2 with three degrees of freedom ($\Delta\chi^2 = 62.01$). By adding adolescent disclosure and fathers' knowledge constructs into our estimation (just as a predictor and not as a mediating factor), the model produced a dramatically significant improvement over the bivariate model ($\Delta\chi^2 = 189.96$). Finally, over the no-beta (four gammas) model, no significant improvement was found by adding the connection (betas) between adolescents' disclosure and fathers' knowledge and adolescent antisocial behavior ($\Delta\chi^2 = 4.83$). Both the NNFI and the CFI show a gradient in which we see a substantial and continuous improvement until the no-beta (four gammas) model. Thus, results indicate that adolescents' antisocial behavior and disclosure and father's knowledge were directly predicted by both father control and father–child closeness.

Testing the Theoretical Model for Mothers Based on Child's Gender

After evaluating the overall fit of the model for mothers, multigroup comparisons were used to examine the extent to which this model is consistent, in terms of covariance matrices (Σ) and forms (dimensions, and patterns of fixed, free, and constrained values; k) across students' gender. All the fit indices presented indicate significant statistical differences in the covariance matrices, $\chi^2(36) = 506.83$, $p < .01$, CFI = .63, NNFI = .42, RMSEA = .20 (.18–.21), and forms, $\chi^2(29) = 144.02$, $p < .01$, CFI = .93, NNFI = .87, RMSEA = .11 (.09–.12), between boys and girls. It was therefore necessary to analyze and compare the structural parameters of the model for the different subgroups (see Figure 2).

Almost all the paths are the same as the original model. However, the difference is that for boys there are significant paths between control and antisocial behavior as well as disclosure and antisocial behavior (but not for girls). For girls there is a significant path between closeness and parental knowledge (but not for boys). Moreover, the squared multiple correlations for structural equation for boys are $R^2_{\eta 1} = .40$, $R^2_{\eta 2} = .46$, $R^2_{\eta 3} = .37$; for girls they are $R^2_{\eta 1} = .57$, $R^2_{\eta 2} = .45$, $R^2_{\eta 3} = .72$. Differences in the models suggest that as it relates to antisocial behavior, the benefits of parental control and parental style differ according to the child's gender, with boys benefiting more from parental control and girls benefiting from more closeness in the parent–child relationship.

Discussion

The present study employed a multi-informant design to examine the adolescent–parent processes associated with antisocial behavior in a sample of Italian early adolescents. The results provided general support for our proposed model for mothers and partially conflicted with the results obtained by Soenens et al. (2006). In support of our proposed model, we found that maternal

Table 2
Incremental Fit Comparisons for Nested Model (Mother)

Model	χ^2	*df*	*p*	NNFI	CFI	Change in χ^2		
						$\Delta\chi^2$	*df*	*p*
Baseline (no gammas, no betas)	994.34	22	<.001	.28	.44			
Bivariate (two gammas)	694.82	19	<.001	.31	.53	299.52	3	<.001
No-beta (four gammas)	89.05	16	<.001	.91	.95	605.77	3	<.001
Hypothesized (four gammas, two betas)	53.11	13	<.001	.93	.97	35.94	3	<.001

Note. NNFI = non-normed fit index; CFI = comparative fit index.

Table 3
Incremental Fit Comparisons for Nested Model (Father)

Model	χ^2	*df*	*p*	NNFI	CFI	Change in χ^2 $\Delta\chi^2$	*df*	*p*
Baseline (no gammas, no betas)	300.28	24[a]	<.001	.21	.33			
Bivariate (two gammas)	238.27	20[a]	<.001	.17	.41	62.01	4	<.001
No-beta (four gammas)	48.32	16	<.001	.81	.89	189.96	4	<.001
Hypothesized (four gammas, two betas)	43.48	13	<.001	.80	.89	4.83	3	*ns*

Note. NNFI = non-normed fit index; CFI = comparative fit index.
[a] Difference in terms of degrees of freedom from the mother model is attributable to the number of fixed parameters.

control is positively related to early adolescents' self-disclosure and to mothers' knowledge of their child's behavior. On the other hand, mother–child closeness is positively related to early adolescents' self-disclosure and to mothers' knowledge and adolescents' antisocial behavior. Our results indicate that the extent to which mothers provided high levels of control over children's behavior and established a close relationship promoted self-disclosure and decreased the probability that their child would engage in antisocial behavior. This result supports Darling and Steinberg's (1993) argument that parenting practices and parenting style may have distinct roles in regulating children's behavior, with parenting style promoting a positive family climate, which in turn promotes parent–child emotional closeness and fosters the disclosure of personal information from the child.

Also, our analysis suggests that mothers' control was not directly associated with lower levels of adolescents' involvement in antisocial behavior; that is, most of the effects of parental control on antisocial behavior were due to the increased disposition of the child to disclose to their parents. According to Soenens et al. (2006), this suggests that the direct effects of parental control on problem behavior might be mediated mostly by adolescent disclosure; it also suggests that parents might balance active surveillance and firm standards for behavior (Gray & Steinberg, 1999) with a focus on promoting a positive relationship with their child (Stattin & Kerr, 2000).

The amount of variance in adolescent self-disclosure that was explained by mother–child closeness suggests that there are other important factors that may impact an adolescent's willingness to self-disclose. The importance of self-disclosure in predicting antisocial behavior suggests that further investigation is needed to determine child and environmental factors that may promote self-disclosure. Biological factors, such as temperament, may affect adolescents' willingness to self-disclose or may affect how they experience the parent–child relationship. Also, the general measure of disclosure used in this study does not allow us to determine how much the nature of the information they are choosing to

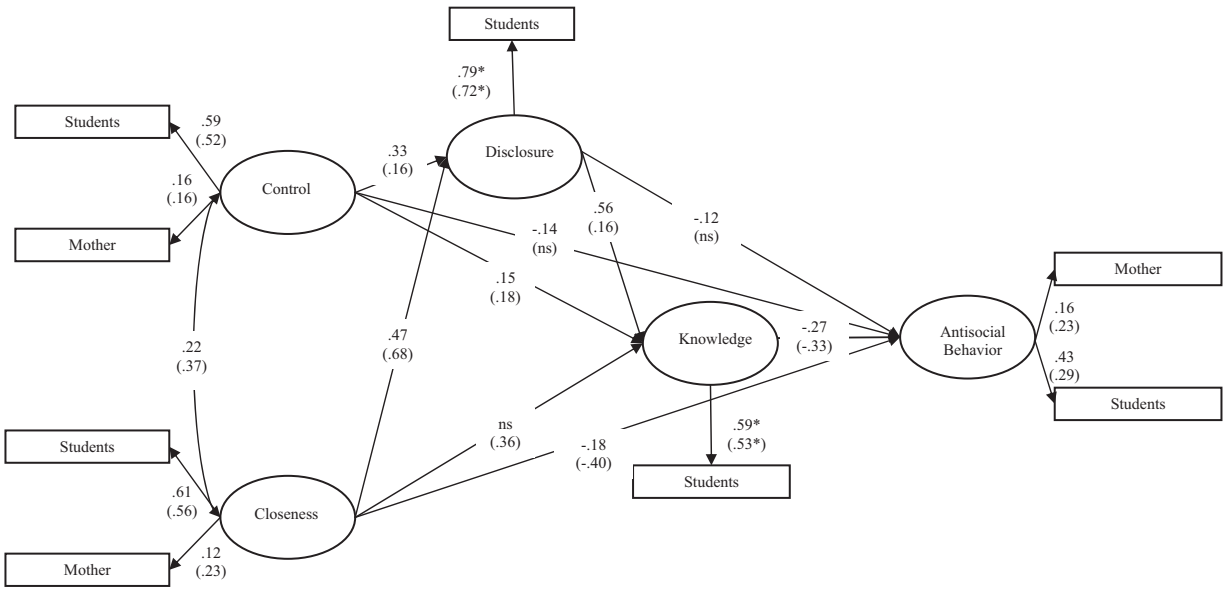

Figure 2. Standardized path coefficients for the mother model, separately for student gender (girls). $\chi^2(12) = 39.57$, $p < .01$, comparative fit index (CFI) = .96, NFI = .94, non-normed fit index (NNFI) = .93, root-mean-square error of approximation (RMSEA) = .06 (.04–.09); $\chi^2(12) = 21.50$, $p < .05$, CFI = .99, NFI = .97, NNFI = .97, RMSEA = .05 (.01–.08). * We assigned the fixed value .15 times the variance of *y* to the corresponding parameter theta-epsilon (Jöreskog & Sörbom, 1996a, p. 196).

disclose may affect adolescents' willingness to disclose. Recently, Smetana et al. (2006) reported that adolescents felt more obligated to disclose information concerning school work than information related to personal and moral issues. Future research would be helpful to examine whether the patterns we observed hold true across different content or types of behaviors.

The results of the study indicate that the model did not adequately fit for fathers. Although the research related to gender differences in parenting styles and practices is sparse, this result suggests that mothers and fathers may be distinct in the ways in which they seek and receive information. Because disclosure and parental knowledge are central constructs in this study, results confirm (Smetana et al., 2006) that adolescents are generally more willing to disclose to mothers than to fathers, and for this reason mothers may have more influence on the behavior of their child. Also, the lack of fit of the model may be an indicator of gender differences in parental roles in Italian families. That is, Italian fathers are much more focused on taking care of the economic needs of the family and are less involved in the management of children's behavior.

Many of the differences found in the analysis based on the child's gender are consistent with previous research on gender differences. It seems that girls' closeness to their mothers increased their mothers' knowledge. Also, closeness was not related to mothers' knowledge of boys' behavior. However, boys overall reported closer relationships with their mothers than did girls. This finding is in contrast to previous research (e.g., Claes et al., 2003) and suggests several possible interpretations. First, it may indicate that mothers may cater to boys more because of the greater value placed on the wellbeing of boys. However, no existing studies suggest that the privileging of boys is more pronounced in Italy than in other western cultures that do not share these results. Second, it may reflect the greater effort mothers may exert to know what their male children are doing, because boys are less likely to disclose and parents are likely to have less knowledge of their behavior. If parents expect closeness to increase their knowledge (as our data indicate for girls), they may escalate their attempts to connect with boys to achieve a similar level of knowledge. Finally, it may reflect mothers' attempts to counteract the greater likelihood that their male children may become involved in antisocial behavior. Consistent with previous studies, our data indicated that overall, boys were more likely to participate in antisocial behavior. Consequently, Italian parents may put more effort into trying to mitigate the greater risk by favoring their male children. More research examining the cultural and racial dynamics of mother–adolescent closeness is needed to substantiate any of these hypotheses.

In contrast to the findings for mothers, there were no gender differences observed in the children's relationship to their fathers. This result is consistent with the general idea that boys are less likely to self-disclose to parents than girls, and thus parents are less informed about their male child's activities (Crouter & Head, 2002). It seems that this gender effect is independent of the level of closeness to the parents. This may also be explained in terms of the tendency for boys to be more secretive about their behavior (Smetana et al., 2006). Moreover, in considering this result we must take into account that some studies suggest that during early adolescence, girls tend to be more emotionally involved in their families than boys (see Butler & Nolen-Hoeksema, 1994).

Overall, these results do contribute to the growing evidence that adolescents play an important and active role in regulating the amount of information that parents have about their behavior and in allowing their parents to monitor their behavior. At the same time, this also indicates that a parent's ability to cultivate an open and positive relationship may be as important as any specific parenting practice in determining the amount of information they have about their adolescents' behavior and in influencing their child's behavior. For this reason, parenting interventions that promote skills designed to improve the overall relationships and family dynamic may be particularly powerful in decreasing adolescent behavior problems (Kumpfer & Alvarado, 2003).

Limitations and Conclusions

The present data have several notable limitations. The principal limitation is the way in which parents were selected to participate. By allowing parents to decide which parent participated in the study, we ended up with a significantly smaller sample of fathers than mothers. The selection process raises the possibility that fathers who did participate may differ from fathers who did not participate on important attributes such as their level of involvement or their closeness to their child. Furthermore, the smaller number of fathers reduced the statistical power of the parent-specific analysis, thus making it more difficult to detect some of the more subtle relations that may exist in the father-specific model. Despite the smaller numbers, the sample of fathers was large enough to test our model based on the ratio between the sample size and the number of parameters (Bentler, 1995). The threats to external and statistical conclusion validity suggest the need for caution in our conclusions about fathers' effects on children's antisocial behavior. Although our model for fathers did not produce an adequate fit, our results do suggest that fathers' closeness and control can play a role in predicting adolescent self-disclosure and antisocial behavior. It is important for future studies to include a more systematic sample of fathers (i.e., by random selection of the participating parent or by having both parents provide information) to determine the magnitude and reliability of this effect. A second limitation is the low correlation between the indicators of self-disclosure and parental knowledge, together with their implementation, which only partially overlaps with the measure used by Stattin and Kerr (2000). Therefore, it is possible that some of the observed differences may be due to instrumentation. Further, the parental control variable emphasizes parental contributions to the actual decision-making as opposed to parental monitoring and discipline (e.g., Spoth et al., 2006). Although we believe that this implementation taps into core aspects of the construct, it is important to qualify our inferences related to parental control because of the differences in measurement strategies.

Also, the present cross-sectional design does not allow us to determine the stability of the effects or to study how the relations between these variables changes over time. Longitudinal (including experimental and other panel) studies of parenting, adolescent self-disclosure, and parental knowledge are needed to determine the causal relations with antisocial behavior. In any case, the poor fit obtained from the test of the alternative model indicates that, at least in early adolescence, parenting variables are more likely to

predict self-disclosure than whether or not the child is engaging in antisocial behavior.

Another issue of note is the low correlation between parent and youth reports. This is an effect that has been observed in previous studies (see Tein, Roosa, & Michaels, 1994). We combined these responses into a latent construct. By doing this we reduce the artifact (source error effects) that increases the probability of finding significant relations among variables when using one informant (see Bartels et al., 2004; Cook & Goldstein, 1993). A final issue is that the sample was drawn from a region in northeastern Italy and may not be generalizable to early adolescents in other parts of Italy, where parenting styles and other cultural factors may be very different (see Claes et al., 2003).

Despite these limitations, the present study does provide important insight into the complementary role that parents and adolescents play in promoting positive adolescent outcomes. It suggests that parents can still play an important role in terms of influencing their children's behavior during early adolescence by cultivating a close relationship and exercising some control. However, early adolescence marks a special developmental stage for both adolescents and parents. For adolescents, it is the period in which they begin to exercise some independence and make their own choices regarding their behavior and how much information they share with their parents. For parents, it marks a period in which they begin to develop a more adult relationship with their child. This study suggests that for mothers in particular, maintaining some of the boundaries and limits that are consistent with earlier developmental stages can reduce adolescent antisocial behavior. However, it is important that they recognize the limits of their control and promote open and close relationships in which their adolescents are comfortable sharing information about their activities.

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