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How do Parents Facilitate or Inhibit Adolescent Disclosure?
The Role of Adolescents' Psychological Needs Satisfaction

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Adolescents' disclosure to parents has become an especially salient topic in research on

parent-adolescent relationships after publication of two significant studies that showed how most

of parental knowledge about youth whereabouts stemmed from youths' spontaneous and free-

willing divulgence of information rather than parental active strivings to monitor and control their

children (Kerr & Stattin, 2000; Stattin & Kerr, 2000). These findings shifted researchers' focus

from the question of how parents can effectively monitor their adolescents to antecedents of

youth disclosure and the question of how parents might facilitate it.

Parental Correlates of Youth Disclosure

Previous research on adolescent disclosure to parents has provided some insight into

parental behavior that might facilitate or inhibit adolescent disclosure. Results from correlational

studies have suggested that adolescents who disclose more freely tend to have parents who are

warm (Blodgett Salafia, Gondoli, & Grundy, 2009), accepting (Smetana, Metzger, Gettman, &

Campione-Barr, 2006), responsive (Soenens, Vansteenkiste, Luyckx, & Goossens, 2006),

authoritative (Almas, Grusec, & Tackett, 2011; Darling, Cumsille, Caldwell, & Dowdy, 2006)

and supportive (Tilton-Weaver, 2013). Contrariwise, parental criticism (Rosenthal, Efklides, &

Demetriou, 1988), unresponsiveness (Golish & Caughlin, 2002) and parental negative reactions

to youth disclosure, such as sarcasm, ridicule and judgment (Kerr, Stattin, & Trost, 1999) showed

to be negatively linked to youth disclosure. Regarding the correlation between parental

psychological control and adolescent disclosure, research results are rather inconsistent. While

Soenens et al. (2006) found parental psychological control to be a predictor of less adolescent

disclosure, Smetana et al. (2006) found it to be positively related to disclosure of personal issues.

A third study showed a non-significant correlation between parental psychological control and

youth disclosure (Hunter, Barber, Olsen, McNeely, & Bose, 2011). These findings suggest that

counteracting effects might be at work here - children might not be very keen on voluntarily

disclosing to intrusive parents, however may sometimes feel an implicit pressure to do so (Kearney & Bussey, 2014).   In line with that, a recent study showed that when mothers solicited information, adolescents disclosed more but also kept more secrets from them (Villalobos Solís, Smetana, & Comer, 2015).

Through a focus group study with adolescents (Tokić & Pećnik, 2011) four broad categories of parental behaviors specifically involved in the context of adolescents' disclosure to parents were identified: *inviters* (e.g. asking unobtrusive questions, inviting unconditional disclosure, parental self-disclosure, positive affective state,), *inhibitors* (e.g. unavailability, intrusive questioning), *positive reactions to disclosure* (e.g. emphatic understanding, attentive listening, constructive feedback, calm reaction, negotiating) and *negative reactions to disclosure* (e.g. punishment, anger and yelling, silent treatment, showing mistrust, lack of understanding). On this basis, an instrument for measuring *Parental Behaviors in the Context of Adolescent Disclosure (PBAD)* was developed (Tokić Milaković & Pećnik, 2014).   It consists of three factors representing antecedents of disclosure: *initiating conversation*, *intrusiveness* and *unavailability,* and three factors representing parental reactions to adolescent disclosure: *support and respectful guidance,* a *let-down* and *punishment.*   All factors, except fathers' intrusiveness, correlate with reported disclosure to mothers and fathers significantly and in the predicted direction (Tokić Milaković & Pećnik, 2014).   Those two studies contributed to the existing literature by introducing some disclosure-relevant parental behaviors that had not been linked with adolescent disclosure previously (e.g. unavailability, respectful guidance, a let-down), and by providing a contextually specific framework to organize parental behaviors relevant in the process through which adolescent disclosure is being facilitated or inhibited. The given framework will be used in the current study.

Using Self-Determination Theory in Explaining the Process of Facilitating or Inhibiting

Adolescent Disclosure: The Role of Adolescents' Needs Satisfaction

Adolescents actively manage parents' access to their whereabouts, by choosing what, when, and how much to disclose to their parents (e.g. Marshall, Tilton-Weaver, & Bosdet, 2005). In line with the dynamic transactional view on relationship development (Kuczynski & Parkin, 2009; Sameroff, 2009) these decisions are largely dependent upon their expectations of probable parental reactions, which are based on the history of parental behaviors in previous occasions (Hinde, 1979). Consistent with these views, research showed that the prominent reason for nondisclosure was to avoid negative parental reactions (Brown, Bakken, Nguyen, & Von Bank, 2007; Marshall et al., 2005), while youth viewed experiencing and anticipating positive parental reactions as facilitating their decision to disclose (Hunter et al., 2011; Tokić & Pećnik, 2011).

To better understand adolescents' decisions to disclose, it is important to comprehend how youths perceive parental actions and reactions. According to the constructivist perspective, adolescents actively interpret information in their social environment and respond to their own subjective interpretations of events rather than to objective events "per se". One possible way in which adolescents might view their parents' behaviors is through the lens of their psychological needs fulfillment in the relationship. As proposed by the self-determination theory (SDT, Ryan & Deci, 2000), needs for relatedness, autonomy and competence are considered universal psychological needs, and need-fulfillment can be either supported or thwarted in different relational contexts. The perception of needs (dis)satisfaction can serve as a motivator for adolescents' subsequent actions (e.g. disclosure or non-disclosure) aimed at gaining or maintaining the desired level of need-satisfaction in their relationship with parents, therefore, as a mediator between parents' behaviors and adolescents' disclosure.

For instance, if adolescents saw parental reactions to something they disclosed as threatening to their *relatedness* to parents, they would be inclined to keep such information secret in future in order to preserve the relationship. It was shown that protecting another's feelings (DePaulo & Kashy, 1998) or keeping parents from worrying (Tilton-Weaver & Marshall, 2008) were prominent reasons for non-disclosure.   Conversely, if followed by positive parental reactions (i.e. active listening, constructive feedback and support), disclosure might consequently serve as a means for building sense of closeness with the parent, thus supporting a close relationship development (Rosenfeld, 2000; Yau, Tasopoulos-Chan, & Smetana, 2009).

Similarly, when youth are confronted with parenting behaviors that compromise their needs for *autonomy* (e.g. intrusive questioning, being punished for the shared information, parent's anger), they might attempt to maintain or regain their sense of autonomy by non-disclosing disputed information to their parents (Almas et al., 2011; Darling et al., 2006; Tilton-Weaver et al., 2010).   On the other hand, if adolescents encounter behaviors they perceive as autonomy supportive (e.g. support and respectful guidance), they might be prompted to willingly disclose to their parents expecting supportive social input, thus reaffirming their sense of autonomy.

Finally, by self-disclosing one can achieve social impact and achieve one's own goals (Rosenfeld, 2000), which may have an effect on the overall experience of *competence.*   In case that adolescents' expressing own attitudes meets positive reactions (e.g. active consideration of the arguments, negotiation), they are likely to continue to disclose to parents even when it comes to disputable matters.   However, if expressions of adolescents' experiences and views result in parents' negative reactions (e.g. disregard and ignoring, angry reactions, ridicule), adolescents' sense of competence might be threatened, which might result in filtering out the information that is not in accordance with parents' opinion.   Thus, adolescents from authoritative homes are more

prone to disclosing disagreement with a parent, and to lie less about the disputed content (Darling et al., 2006).

The Proposed Model and Research Hypotheses

Leaning on the SDT (Ryan & Deci, 2000) and transactional view of the relations development (Sameroff, 2009) we proposed a conceptual model (see Figure 1) postulating that the correlation between parental behaviors in the context of adolescent disclosure and reported disclosure could, to a certain extent, be explained by the way adolescents perceived their psychological needs for relatedness, autonomy and competence being satisfied in the relationship with their parents (partial mediation model). The aim of this study was to test whether the cross-sectional data provided support for the proposed model.

We expected that adolescents' self-reported disclosure should depend on whether parental behaviors in the context of their disclosure were perceived as supportive or unfavorable of the adolescents' psychological needs.   More specifically, in *hypothesis 1,* we supposed that the presumably disclosure-facilitating parental behaviors (initiating conversation, support and respectful guidance) would be positively linked to adolescents' disclosure, both directly and indirectly through adolescents' perception of the satisfaction of the one or more of the basic psychological needs. As *hypothesis 2,* we suggested the presumably disclosure-inhibiting parental behaviors (intrusiveness, unavailability, a let-down and punishment) to be negatively linked to adolescents' disclosure, both directly and indirectly through the satisfaction of the needs. Although we expected adolescents' perceptions of the satisfaction of different psychological needs to be correlated, within the multiple mediation model, we expected unique indirect effects for each psychological need (*hypothesis 3)*.

To our knowledge, only one study (Tilton-Weaver et al., 2010) empirically examined adolescent sense of connectedness (relatedness) and sense of being controlled (autonomy) by

parents as mediators of the link between perception of parents' reactions and adolescents'

disclosure (and secrecy).   The results showed that parental negative reactions were associated

with adolescents' increased feelings of being overly controlled by parents and reduced feelings of

connectedness with parents, which predicted increased secrecy and reduction of disclosure over

time.   In contrast, positive parental reactions were predictive of an increased sense of connection

with parents, which predicted increase of disclosure over time.

        The current study complements the mentioned findings and generally refines the

understanding of parent-adolescent dynamics by: (a) using more contextually specific measures

of perceived parental behaviors (Tokić Milaković & Pećnik, 2014), (b) adding the need for

competence in addition to needs for relatedness and autonomy as potential mediators, (c)

distinguishing between routine disclosure and more intimate self-disclosure, and (d) by

accounting for parents' gender in the model.

Differentiating between routine and more intimate disclosures. In a recent review article,

Tilton-Weaver, Marshall & Darling (2013) criticized authors for blurring the conceptual

distinctions between two types of adolescents' disclosure to parents, thereby jeopardizing their

construct validities. They theoretically distinguished between adolescent disclosure of their

whereabouts and activities (routine disclosure) and a more intimate type of disclosure (self-

disclosure), pointing to the importance of addressing the overlap and the distinctiveness of the

precursors and outcomes of these different types of disclosures to parents in future studies. With

respect to this recommendation, our study included both a frequently used measure of (routine)

disclosure to parents and a measure of adolescents' disclosure about feelings and concerns, which

is more intimate in nature. However, due to considerable overlap between these two constructs,

we expected to find similar patterns of indirect links between parental behaviors and both types

of disclosure, through adolescents' perception of their psychological needs satisfaction

(*hypothesis 4*).

Considering Parents' and Adolescents' Gender. The construct "disclosure to parents" has

been frequently measured as a uniform entity (e.g. Frijns, Keijsers, Branje, & Meeus, 2010;

Smetana & Metzger, 2008; Stattin & Kerr, 2000) implying that the process and the extent of

disclosures to mothers and fathers are similar.   However, a review of research on mother-child

and father-child relationships pointed to inadvisability of treating relationships with parents as if

they were monolithic (Collins & Russell, 1991).

        In addition to parents' gender, our study took into account adolescent's gender, since

previous studies had found that girls generally disclosed more than boys (Darling et al., 2006;

Stattin & Kerr, 2000), especially when mothers were targets (Smetana et al., 2006) and when

content was personal (Yau et al., 2009).   According to a research review (Buhrmester & Prager,

1995) most disclosure takes place between mothers and daughters, while father-daughter

relationship is characterized by the least disclosure.

        Although gender-related mean-level differences in disclosure to mothers and fathers are

well established, less is known about differences in the associations between youth disclosure and

its potential predictors, such as perceptions of parental behaviors and perceptions of

psychological needs satisfaction in the relationship.   Tilton-Weaver et al. (2010) found no

significant differences between boys and girls in the paths of the mediational model predicting

changes in youth disclosure and secrecy to parents, however, they did not account for parents'

gender. The absence of other relevant literature on adolescents' and parents' gender- related

specificities in patterns of links between disclosure and its antecedents suggested the need for an

exploratory approach to these variables, so we do not explicate the hypotheses regarding

differences between models for mothers and fathers, neither for the moderating role of

adolescent's gender.

Method

Procedure and Participants

The research was conducted using a sample of seventh-graders in Croatia, selected via

cumulative size method of sampling (Lohr, 2009) from the population of all seventh-grade

classes in primary schools in Croatia.   The sampling frame was ordered by counties, which kept

the regional structure of the sample representative.   Out of all registered pupils in the sample,

1074 agreed to participate in the study and provided active parent consent (89.6%). Most of the

participants lived with both parents (88.6%).   The predominant educational level of their parents

was a high school degree (62.6% of mothers; 70.6% of fathers).

The study was permitted by the Ethical Board of the Faculty of Law.   The participants

filled in the questionnaires during the usual class hours.   Responses on all used measures were

given by adolescents, separately for mothers and fathers.   The order of the questionnaire parts

concerning mothers and fathers was counterbalanced.   In total, 28 participants did not respond to

the part of the questionnaire regarding mothers, and 43 students to the questions regarding fathers

(due to lack of contact).   Additionally, invalid responses were omitted from the analysis. The

responses of 1022 pupils (509 boys and 513 girls) with valid data for mothers and the responses

of 1007 students with valid data for fathers (505 boys and 502 girls) were used in the analysis,

out of which around 92% provided full data, while the others had missing values on some

variables. The average age of participants was 13.4 years.

Instruments

The Parental Behaviors in the Context of Adolescent Disclosure. Adolescent

perception of parental behaviors anteceding adolescent disclosure and parental reactions to

disclosure were measured using PBAD (Tokić Milaković & Pećnik, 2014). The PBAD-A

(antecedents) consists of 9 items describing parental emotional states or behaviors presumed to

facilitate and 8 items describing inhibiting parental states and behaviors. Participants were asked

to assess how often their mother/father behaved in the described ways on a scale from 1-never to

5-always. The PBAD-R (reactions) consists of 16 items that describe disclosure-facilitating

parental reactions, and 16 items representing disclosure-inhibiting parental reactions to youth

disclosure. For each item, the youth were asked to assess how often their mother and father

reacted to their disclosure in the described way. Factor analyses of the PBAD-A revealed three

factors for both mothers and fathers (Tokić Milaković & Pećnik, 2014): *initiating conversation*

(e.g. She/he tells me about daily happenings in her/his life; She/he asks me what's new.),

intrusiveness (e.g. When she/he wants to find out something, she/he questions me until I tell) and

unavailability (e.g. She/he's in a hurry). Factor analyses of the PBAD-R yielded three factors:

support and respectful guidance (e.g. She/he respects my opinion even if she/he disagrees), *a let-

down* (e.g. She/he diminishes the importance of my problem) and *punishment* (e.g. She/he yells at

me). Cronbach's alphas for all factors were acceptable (.75 – .92). The original items, results of

the factor analyses, as well as predictive and construct validity assessment results are available

elsewhere (Tokić Milaković & Pećnik, 2014).

Disclosure of daily activities. Adolescents assessed disclosure of daily activities using a

five-item scale (Kerr & Stattin, 2000; Stattin & Kerr, 2000), separately for mothers and fathers

(e.g. Do you tell your parents what you do during your free time?). The five-point scale

response format was used (1-never to 5-always). Several studies found a two-factor structure of

the scale: Disclosure and Secrecy (Almas, Grusec, & Tackett, 2011; Frijns, Keijsers, Branje, &

Meeus, 2010; Tilton-Weaver et al., 2010), pointing out to the importance of differentiating the

two. Since we could not be certain whether this structure stemmed from conceptual difference

between disclosure and secrecy or if it represented a topic specificity (disclosure items concerned

school and friends; secrecy items concerned free time, nights and weekends), we rephrased the

two secrecy items to measure disclosure in a more straightforward way (e.g. "Do you hide...?"

was changed to "Do you tell…?").   Exploratory factor analyses resulted in one factor solution for

both mothers and fathers, explaining the 59.6% and 56.9% of the total variance, respectively.

Cronbach's alphas for this scale were acceptable (.88 for mothers and .87 for fathers).

Disclosure of feelings and concerns. An eight-item scale (Kerr et al., 1999) was used to

measure adolescents' self-disclosure to parents about their feelings and concerns (e.g. Do you

talk to your mum/dad about intimate matters?).   During translation, we excluded the adverbs of

frequency (e.g. often) because they had already been included in the five-point response format

(1-never to 5-always).   Cronbach's alphas for this scale were .93 for mothers and .91 for fathers.

Basic need satisfaction. The basic need satisfaction scale (La Guardia, Ryan, Couchman,

& Deci, 2000) was originally developed to capture the degree to which participants feel support

for their autonomy, competence, and relatedness needs from a partner in any relationship.   In this

study, adolescents rated their basic needs satisfaction in the context of their relationship with

mothers and fathers on a 4-point scale (1= does not apply at all; 4= fully applies).   The scale

consists of 9 items, three of them representing each need.   Alpha reliabilities for *relatedness* (e.g.

When I'm with my mom/dad, I feel loved and cared about) were .66 for mothers, and .68 for

fathers.   Cronbach's alphas for *autonomy* (e.g. When I'm with my mom/dad, I feel free to be

who I am) were rather low; .50 for fathers, and .51 for mothers.   By omitting the negatively

worded item (When I'm with my mom, I feel controlled and pressured to be certain ways),

Cronbach's alphas increased to an acceptable degree (.66 for both parents). Cronbach's alphas for

competence were .65 for both mothers and fathers (e.g. When I'm with my mom/dad, I feel

inadequate or incompetent).

Plan of Analysis

To test the analytical model presented in Figure 1, path analyses with the observed

variables in Mplus 7.11 (Muthén & Muthén, 2012) using the maximun likelihood estimator will

be performed. Since adolescents reported on their mothers and fathers separately, two sets of all

analyses will be made - one for adolescents' reports on their mothers and one for reports

concerning their fathers. In these models, we will estimate regression paths between (1)

perceived parental behaviors and adolescents' psychological needs satisfaction, (2) between

perceived parental behaviors and adolescents' disclosure, and (3) between adolescents' needs

satisfaction and disclosure. Additionally, we will examine the indirect effects involving

adolescents' psychological needs satisfaction as mediators for the link between perceived

parental behaviors and adolescents' disclosure. The indirect effects will be tested using the

model indirect command of the Mplus language, which is a well-used method to test for

mediation effects while at the same time examining the correlations among all variables in the

model. We will use the bootstrap sampling method (Shrout & Bolger, 2002) (with $n = 1,000$),

because it does not assume normal distributions of the variables (MacKinnon, Lockwood,

Hoffman, West, & Sheets, 2002). In the analytical models, correlations among the variables

representing parental behaviors, the correlations among the needs satisfaction variables, and the

correlation between two measures of disclosure will be assessed (see Figure 1 for specifics).

Three indices will be used to evaluate model fit: The Comparative Fit Index (CFI), the

Tucker-Lewis Index (TLI), and the Root Mean Square Error of Approximation (RMSEA). CFI

and TLI values above .90 and RMSEA values of .06 or lower are considered indicators of an

acceptable fit between the hypothesized model and the observed data (Hu & Bentler, 1999). To

handle the missing data, Full Information Maximum Likelihood (FIML) will be used, as it is

appropriate even when data are not missing at random (Little & Rubin, 2002). This method uses

all existing information to estimate the parameters, and has shown to produce less biased

estimates than listwise or pairwise deletion (Schafer & Graham, 2002).

To test for differences as function of the adolescent's gender, we will run multiple group

comparisons on all associations in the models. First, we will compare one model with equality

constraints for boys and girls on all paths with another model having all paths free to vary

between boys and girls. In case of finding this omnibus test significant, one path at a time will be

freed to examine on which paths boys and girls differ significantly, with a significant drop in χ^2

as the indicator of such difference.

Results

Descriptive Results

Zero-order correlations are reported in Table 1. Most correlations were significant and in

the expected direction: Adolescents' perceptions of more facilitating and less inhibiting parental

behaviors were linked to higher levels of their psychological needs satisfaction and to more

disclosure to parents, and higher levels of adolescents' needs satisfaction were associated with

more disclosure. Exceptions included parental intrusiveness, unavailability, and a let-down,

which were not always significantly associated with adolescents' disclosure. Means and standard

deviations for all measures are reported in Table 2.

Relations among Mothers' Behaviors, Adolescents' Psychological Needs Satisfaction, and Adolescents' Disclosure to Mothers

The final model (see Table 3) for mothers showed a good fit to the data, $\chi^2 = 72.78$ (48), $p = .012$;

RMSEA = .03; CFI = .99; TLI = .99. Regarding the first part of the model (i.e. the links between

mothers' behaviors and adolescents' psychological needs satisfaction), most links were

significant: Mothers' facilitating behaviors (initiating conversation, support and respectful

guidance) predicted higher levels of adolescent needs satisfaction whereas mothers' inhibiting

behaviors (intrusiveness, unavailability, a let-down, punishment) predicted lower levels of needs satisfaction. As exceptions, mothers' unavailability, and a let-down by mothers were significantly linked to satisfaction of some but not all three adolescents' needs.

Concerning the second part of the model, the perceived levels of needs for relatedness and autonomy satisfaction were significantly linked to the levels of disclosure of both daily activities and feelings and concerns. The level of need-for-competence satisfaction, however, was not[1].

The significant indirect effects (while controlling for the direct links) are reported in Table 4. The results on data about mothers are highly congruent with the *hypothesis 1* showing positive indirect links between mothers' facilitating behaviors (initiating conversation, support and respectful guidance) and more adolescents' disclosure, through the satisfaction of the needs for relatedness and autonomy. Over and above the indirect effects, perceived maternal facilitating behaviors (initiating conversation, support and respectful guidance) also predicted both types of disclosure directly (see Table 3).

The results are also partly consistent with the *hypothesis 2* in that the negative indirect links between perceptions of some inhibiting parental behaviors (unavailability, punishment) and adolescents' disclosure through the satisfaction of the needs for relatedness and autonomy have been found. Controlling for the mentioned indirect links, for most of the inhibiting behaviors no direct links were found[2]. As an exception, a direct link between mothers' unavailability and disclosure of feelings and concerns occurred, but only among girls.

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[1] Need-for-competence satisfaction was inversely linked to the level of disclosure of daily activities (see zero-order correlations in Table 1), indicating a suppressor effect.

[2] The path coefficients for the link between a let-down and disclosure are reversed in sign indicating a suppressor effect (see zero-order correlations in Table 1)

Hypothesis 3 suggested that there were unique indirect effects through each psychological

need. In contrast, no significant specific indirect links (while controlling for all other indirect

effects) were found for the need-for-competence satisfaction, while some unique indirect effects

occurred for the need-for-relatedness and need-for-autonomy satisfaction (see Table 4). Findings

are rather similar for the two measures of disclosure, which is in line with the *hypothesis 4* (with

the exception of the rather small indirect link between maternal punishment and disclosure

through the need-for-autonomy satisfaction, which was found only for disclosure of feelings and

concerns).

Multiple group comparisons analyses showed the omnibus test significant ($\Delta\chi^2$=134.65

(55), p<.001) and subsequent analyses showed that only two regression path coefficients differed

significantly between boys and girls (see Table 3) – the one for the direct link between mothers'

intrusiveness and adolescent disclosure of feelings and concerns (χ^2 =7.29 (1), p=.007) and the

direct link between mothers' unavailability and adolescent disclosure of feelings and concerns (χ^2

=5.48 (1), p=.019).

Relations among Fathers' Behaviors, Adolescents' Psychological Needs Satisfaction, and

Adolescents' Disclosure to Fathers

The final model for fathers showed a good fit, χ^2 = 92.75 (53), *p* = .001; RMSEA = .04; CFI

= .99; TLI = .98. Similarly to the results for mothers, almost all perceived fathers' behaviors

were significantly linked to the levels of adolescents' needs satisfaction, for both boys and girls

(see Table 3). The exceptions were fathers' unavailability, which was not significantly linked to

the perceived levels of adolescents' need-for-autonomy and need-for-competence satisfaction,

and fathers' let-down that was not related to need-for-autonomy satisfaction. Additionally,

fathers' intrusiveness was the only variable that was not significantly related to any of the

adolescents' needs satisfaction appraisals.

Regarding the associations between the levels of adolescents' needs satisfaction and disclosure to fathers (second part of the model in Table 3), only one link was significant – the level of need-for-relatedness satisfaction in the relationship with fathers was significantly linked to more disclosure about daily activities, feelings and concerns.

Accordingly, in contrast to the *hypothesis 3,* the only indirect links found for fathers were those through the need-for-relatedness satisfaction (see Table 4). There was no evidence for the assumptions about the unique mediational role of the other two needs satisfaction in relationship with fathers. Findings are quite comparable for disclosure of daily activities and disclosure of feelings and concerns, which is in accordance with the *hypothesis 4.*

Consistent with the *hypothesis 1*, positive indirect links were found between fathers' facilitating behaviors (initiating conversation, support and respectful guidance) and adolescents' disclosure. Also, over and above the indirect effects, fathers' facilitating behaviors predicted adolescent disclosure directly (see Table 3).

Hypothesis 2 was supported by finding indirect links between most of the inhibiting fathers' behaviors (intrusiveness is the only exception) and adolescent disclosure to fathers through the levels of need-for-relatedness satisfaction. Controlling for the indirect links, the only direct link that was found was a negative link between fathers' punishment and adolescent disclosure.

Multiple group comparisons analyses showed the omnibus test significant ($\Delta\chi^2$=102.09 (55), p<.001), whereas subsequent analyses showed that boys and girls differed significantly only on the path between fathers' let-down and adolescent need-for-competence satisfaction (χ^2 =3.79 (1), p=.050) in that the association was somewhat stronger among boys than among girls (see Table 3).

Discussion

The main goal of this study was to test whether the cross-sectional data collected from a

representative sample of seventh-graders in Croatia are consistent with the mediational model

derived from the SDT (Ryan & Deci, 2000), which posits that the links between perceived

parental behaviors in the context of adolescent disclosure and self-reported adolescents'

disclosure could be explained by the way adolescents interpreted such parental behaviors in terms

of support to their basic psychological needs for relatedness, autonomy and competence.

Generally, the results supported the postulated model to a certain extent.

Out of all parental behaviors in the specific context of youth disclosure, the *facilitating*

parental behaviors were shown to be most highly related with adolescents' reported disclosure,

both indirectly through the perceptions of psychological needs satisfaction and directly, providing

strong support for the hypothesis 1. This is noticeable in the relative magnitude of the path

coefficients in the model (Table 3 and 4). Furthermore, it should be pointed out that support and

respectful guidance is a dominant predictor when looking at indirect links (Table 4), while

initiating conversation predominates as a predictor when looking at direct links of parental

behaviors with adolescent disclosure (above and beyond the indirect links). This might lead to the

conclusion that, while a significant portion of shared variance between parental behaviors and

youth disclosure could be attributed to the way adolescents perceived those behaviors in terms of

their psychological needs satisfaction, much of this interaction probably occurs in a behaviorally-

reactive way. This especially refers to initiating conversation, as youth disclosure might

sometimes be just a spontaneous response to parents' questions or parental own disclosures.

Thus, Rote, Smetana, Campione-Barr, Villalobos, & Tasopoulos-Chan (2012) found adolescent

information management (self-disclosure, avoiding conversation, lying, leaving out controversial

details etc..) to be more related to specific parental reactions during interactions than to more

general affective dimension of the relationship with parents (parental warmth).

Regarding *inhibiting parental behaviors,* compared to facilitating behaviors, their predictive power in the model is rather modest. However, statistically significant indirect links with adolescents' disclosure (mostly through need-for-relatedness satisfaction) were found for parents' unavailability, punishment and fathers' let-down providing some support for the hypothesis 2.

Adding to the ongoing debate about the relations between parental psychological control and adolescent disclosure, we found that mothers' (but not fathers') intrusiveness significantly added to the prediction of the all three needs (dis)satisfaction in the model. However, none of the direct or indirect links to adolescents' disclosure was significant. Looking at the zero order correlations (see Table 1), one might notice that most of the correlations between parental intrusiveness and youth disclosure approximate zero, except from the correlation between mothers' intrusiveness and girls' disclosure about feelings and concerns , which is rather small but existent ($r = -.22, p < .001$). This suggests that an interaction between adolescent gender, parent gender and type of disclosure might be relevant here.

Although each of the perceived parental behaviors (except mothers' let-down and both parents' intrusiveness) was indirectly associated with adolescent disclosure through at least one of the psychological needs satisfaction, the evidence in support of the hypothesis 3 (i.e. unique contributions of the mediators) was rather weak. In general, the results are in line with the assumption about the unique contribution of the *need-for-relatedness* satisfaction in mediating the link between perceived parental behaviors and adolescent disclosure. This was consistent both in the context of relationship with mothers and fathers, for both boys and girls, as well as for different types of disclosure. In addition, the results meet expectations that mothers' facilitating behaviors were indirectly linked to adolescents' disclosure through the level of adolescents' *need-for-autonomy* satisfaction in the relationship (over and above the indirect links through

need-for-relatedness), but no such support was found in the data about fathers. Contrary to

hypothesis 3, the support for the specific mediation through the level of adolescents' *need-for-*

competence satisfaction was not supported in any of the analyses. These results do not

necessarily suggest how need for competence plays no significant role in youth disclosure

facilitation or inhibition process. Alternative interpretation is that it shares a certain amount of

predictive power with other psychological needs in predicting adolescent disclosure (*rs* =.40-.60,

p < .001; Table 1), thus, when controlling for the other two needs and the six parental behaviors

in the model, it did not accomplish a unique contribution in the model. In line with this

interpretation, suppressor effects emerged suggesting to possible problems of multicollinearity in

the model.

Since the only research that tested a similar model treated parents as a combined entity

(Tilton-Weaver et al., 2010) the comparison of the results is limited. Similar to our results,

Tilton-Weaver and colleagues found adolescents' feeling connected (relatedness) to parents to

mediate the link between parental reactions (both positive and negative) and adolescents'

subsequent disclosure. Somewhat contrary to our results (on mothers), the adolescents' feeling

overly controlled (inverse of feeling autonomous) was not shown to mediate the link between

parents' reactions and youth disclosure, however, the mediation was established for the link

between parental negative reactions and adolescents' secrecy (Tilton-Weaver et al., 2010).

Building on their longitudinal study results, our study provides some additional evidence in

support of the view of parenting provided by the SDT (Grolnick, Beiswenger, & Price, 2008),

which implies that parental involvement and structure provision in an autonomy supportive

climate supports children's basic needs fulfillment, which can also manifest in their openness to

parents concerning their whereabouts, feelings and concerns.

As to the different types of disclosure, the same patterns of indirect links were found for disclosure on daily activities (routine disclosure) and more intimate disclosure on adolescents' feelings and concerns, supporting the hypothesis 4. The only exception is the rather small indirect link between mothers' punishment and disclosure through the need-for-autonomy satisfaction that was found for disclosure of feelings and concerns only (see Table 4). The patterns of direct links are also quite comparable. These findings might suggest how in spite of the conceptual distinction of the routine disclosure and more intimate self-disclosure (Tilton-Weaver et al., 2013), the processes through which parents facilitate or inhibit adolescents' disclosure of daily activities and more intimate disclosure about their feelings and concerns might be quite similar. Relatively high correlation between these two types of disclosure (rs =.75-.78, p < .001; Table 1) suggest that they usually co-occur.

The best-fitting models for mothers and fathers are quite comparable. However, several differences between the models for mothers and fathers were found. The most prominent one is the significant indirect link between parental behaviors and youth disclosure through the level of need-for-autonomy satisfaction for reports about mothers, but not fathers. Since mothers express somewhat more psychological control than fathers (Lansford, Laird, Pettit, Bates, & Dodge, 2013), adolescents may be more provoked to balance maternal involvement in their lives by disclosing selectively depending on the perceived mothers' autonomy supportive actions or reactions. Nevertheless, unique mediation through adolescent's need-for-autonomy satisfaction was shown significant only for mothers' facilitating behaviors and mothers' punishment (for disclosure of feelings and concerns), which suggests how actively supporting adolescents' autonomy through constructive positive reactions to disclosure, as well as inviting disclosure in an autonomy supportive way, seems to be crucial for building adolescents' sense of autonomy above and beyond just avoiding mothers' negative reactions to unfavorable disclosures.

The results for boys and girls were quite comparable, in terms of both indirect and direct links, both for the data about mothers and fathers, as well as concerning both types of disclosure. However, a very prominent dyad-specific difference occurred. The direct negative link between mothers' unavailability and adolescents' disclosure of feelings and concerns was greater in size and significant among girls, but not among boys. A similar pattern is already evident when looking at the differences in zero-order correlations of mothers' unavailability and disclosure for boys ($r= -.11$, $p=.015$) and girls ($r=-.45$, $p<0.001$). The difference in zero-order correlations is somewhat less prominent for fathers' unavailability ($r=-.14$, $p<0.001$ for boys; $r= -.38$, $p<0.001$ for girls). One explanation for this pattern might be that girls are more susceptible to aspects of the disclosure situation. Namely, females tend to show somewhat more empathy and responsiveness in relationships with other people than males (Maccoby, 1999). Therefore, girls might be better at noticing when parents (especially mothers) are nervous or preoccupied with other things recognizing the disadvantage of the moment, and consequently, self-inhibiting their disclosure. While doing so, a sense of relatedness could to a certain extent remain intact in case a daughter understands and respects mother's current unavailability (a possible explanation for the direct link), and if not, the sense of connectedness would, to some extent, be weakened (possible explanation for indirect connection through the level of relatedness). These assumptions are still to be explored in future studies.

Limitations, contributions and suggestions for future research

Though we were primarily interested in how parents prompt (or hinder) adolescent disclosure, it is very important to highlight that parent-adolescent interaction is always a "two-way street". Dynamic transactional perspective (Kuczynski & Parkin, 2009; Sameroff, 2009) presumes an iterative process of actions and reactions affecting both youth and parents, so the proposed model can be considered only as a "snapshot" in time based on retrospective adolescent

perception. Thus, the main weakness of this study concerns a collection of data only at one time point - the established correlations within the model represent a necessary, but not a sufficient condition to determine causality. Therefore, alternative models might be conceivable for the established relationships between variables. For example, adolescents' openness in previous encounters might facilitate parental future attempts to prompt adolescents' disclosure, simultaneously building a sense of relatedness. A further test of the transactional model should require at least three points of measurement.

Another limitation concerns the usage of adolescents' reports solely, which leads to the common-method bias.   However, it is sensible to reason that the most precise picture of their own psychological needs satisfaction, as well as the level of their (non)disclosure to parents, could be given by adolescents themselves. Also, when it comes to reports on parental behaviors, parents might be reluctant to report on behaviors they perceive "negative" or overestimate the occurrence of the "positive" ones. In line with the latter, research suggests greater correspondence of the observer's reports to children's than to parents' reports (Sessa, Avenevoli, Steinberg, & Morris, 2001).

Another shortcoming includes the difficulty for adolescents to think retroactively on the broad level when reporting on the frequency of disclosures as well as on incidents of parental concrete behaviors in the disclosure-related situations. Therefore, future studies could benefit from mixed-method approach combining quantitative reports with discussing specific incidents of disclosures to parents.

Some limitations emerge from relatively modest psychometric properties of the Basic need satisfaction scale (La Guardia et al., 2000). Improving the scale by adding more items to each dimension, or using the non-shortened version would be advisable in the upcoming research.

Another avenue for future studies may include adding the "negative side" of the process into the model. The present study mainly focused on the satisfaction of adolescents' needs and on adolescents' disclosure – rather than on the frustration of these needs and on adolescents' concealment strategies (e.g., lying), which might be a possible reason why the predictive power of the inhibiting parental behaviors is quite modest. The absence of the one does not necessarily imply the presence of the other, as is shown in previous work, both for need satisfaction vs. frustration (Chen et al., 2015), and for disclosure vs. secrecy (e.g. Frijns et al., 2010).

Despite presented limitations, this study has several strengths and provides a unique contribution to the existing literature. First, data were collected on a relatively large and representative sample of seventh-graders in Croatia. Second, the study uses a contextually specific framework of parental behaviors relevant in the process of adolescent disclosure. Third, adolescents rated mothers and fathers separately and we found some parents' gender specificities concerning the process of disclosure: Need-for-autonomy satisfaction independently contributed in explaining the link between parents' behaviors and adolescent disclosure in relationship with mothers, but not fathers. Furthermore, the results add to the previous research supporting some of the basic tenets of the SDT applied to parent-adolescent relations (Grolnick et al., 2008). Finding support for the hypothesis that a significant part of the covariance between parental behaviors and adolescents' disclosure to parents can be explained by the adolescents' need-for-relatedness (and need-for autonomy) satisfaction, outlines the importance of considering adolescents' psychological needs in studying the process of their disclosure to parents, both in case of "routine disclosure" (Tilton-Weaver et al., 2013), as well as more intimate self-disclosure of feelings and concerns. Future research should test the model using more refined measures of adolescent disclosure that cover different topics and social domains (Smetana, 2011).

The findings of this study can be applied in interventions with adolescents and parents. Raising awareness of own and other people's psychological needs (dis)satisfaction underlying (more noticeable) behaviors, might be an effective starting point in improving the relationships within the family. The analysis of how individual's behavior supports or thwarts others' psychological needs satisfaction in concrete everyday interactions might be especially insightful. Evaluation studies suggest that people can learn how to behave in a way to support the basic psychological needs of others, and that this behavioral change is accompanied by a positive impact on their partners in diverse relational contexts (see Joussemet, Landry, & Koestner, 2008 for a review). In the field of parent-adolescent relations, measures of psychological needs satisfaction (Le Guardia et al., 2000) and parental behaviors that facilitate and inhibit youth disclosure (Tokić Milaković & Pećnik, 2014) can be used to evaluate the effectiveness of such interventions.

References

Almas, A. N., Grusec, J. E., & Tackett, J. L. (2011). Children's Disclosure and Secrecy: Links to Maternal Parenting Characteristics and Children's Coping Skills. *Social Development*, *20*(3), 624–643.

Blodgett Salafia, E. H., Gondoli, D. M., & Grundy, A. M. (2009). The Longitudinal Interplay of Maternal Warmth and Adolescents' Self□Disclosure in Predicting Maternal Knowledge. *Journal of Research on Adolescence*, *19*(4), 654–668.

Brown, B. B., Bakken, J. P., Nguyen, J., & Von Bank, H. G. (2007). Sharing information about peer relations: Parent and adolescent opinions and behaviors in Hmong and African American families. *New Directions for Child and Adolescent Development*, 116, 67–82.

Buhrmester, D., & Prager, K. (1995). Patterns and functions of self-disclosure during childhood

and adolescence. In K. J. Rotenberg (Ed.), *Disclosure processes in children and*

adolescents (pp. 10–56). Cambridge: Cambridge University Press.

Chen, B., Vansteenkiste, M., Beyers, W., Boone, L., Deci, E. L., Kaap-Deeder, J. V. der, …

Verstuyf, J. (2015). Basic psychological need satisfaction, need frustration, and need

strength across four cultures. *Motivation and Emotion*, *39*(2), 216–236.

Collins, W. A., & Russell, G. (1991). Mother-child and father-child relationships in middle

childhood and adolescence: A developmental analysis. *Developmental Review*, *11*(2), 99–

136.

Daddis, C., & Randolph, D. (2010). Dating and disclosure: Adolescent management of

information regarding romantic involvement. *Journal of Adolescence*, *33*(2), 309–320.

Darling, N., Cumsille, P., Caldwell, L. L., & Dowdy, B. (2006). Predictors of Adolescents'

Disclosure to Parents and Perceived Parental Knowledge: Between- and Within-Person

Differences. *Journal of Youth and Adolescence*, *35*(4), 659–670.

DePaulo, B. M., & Kashy, D. A. (1998). Everyday lies in close and casual relationships. *Journal*

of Personality and Social Psychology, *74*(1), 63–79.

Frijns, T., Keijsers, L., Branje, S., & Meeus, W. (2010). What parents don't know and how it may

affect their children: Qualifying the disclosure–adjustment link. *Journal of Adolescence*,

33(2), 261–270.

Golish, T., & Caughlin, J. (2002). "I'd rather not talk about it": adolescents' and young adults'

use of topic avoidance in stepfamilies. *Journal of Applied Communication Research*,

30(1), 78–106.

Grolnick, W. S., Beiswenger, K. L., & Price, C. E. (2008). Stepping Up without Overstepping:

Disentangling Parenting Dimensions and their Implications for Adolescent Adjustment. In

M. Kerr, H. Stattin, & R. C. M. E. Engels (Eds.), *What can parents do? New insights into the role of parents in adolescent problem behavior* (pp. 211–237). Chichester: John Wiley & Sons.

Hinde, R. A. (1979). *Towards understanding relationships*. London: Academic Press.

Hu, L., & Bentler, P. M. (1999). Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. *Structural Equation Modeling: A Multidisciplinary Journal*, *6*(1), 1–55.

Hunter, S. B., Barber, B. K., Olsen, J. A., McNeely, C. A., & Bose, K. (2011). Adolescents' Self-Disclosure to Parents Across Cultures: Who Discloses and Why. *Journal of Adolescent Research*, *26*(4), 447–478.

Joussemet, M., Landry, R., & Koestner, R. (2008). A self-determination theory perspective on parenting. *Canadian Psychology/Psychologie Canadienne*, *49*(3), 194–200.

Kearney, J., & Bussey, K. (2014). The impact of pressured information management on boys' and girls' psychological functioning. *Journal of Applied Developmental Psychology*, *35*(3), 234–244.

Kerr, M., & Stattin, H. (2000). What parents know, how they know it, and several forms of adolescent adjustment: further support for a reinterpretation of monitoring. *Developmental Psychology*, *36*(3), 366–380.

Kerr, M., Stattin, H., & Trost, K. (1999). To know you is to trust you: parents' trust is rooted in child disclosure of information. *Journal of Adolescence*, *22*(6), 737–752.

Kuczynski, L., & Parkin, C. M. (2009). Pursuing a dialectical perspective on transaction: A social relational theory of micro family processes. In A. Sameroff (Ed.), *The transactional model of development: How children and contexts shape each other.* (pp. 247–268). Washington: APA.

La Guardia, J. G., Ryan, R. M., Couchman, C. E., & Deci, E. L. (2000). Within-person variation

in security of attachment: A self-determination theory perspective on attachment, need

fulfillment, and well-being. *Journal of Personality and Social Psychology*, *79*(3), 367–

384.

Little, R. J. A., & Rubin, D. B. (2002). *Statistical Analysis with Missing Data* (2nd ed.). New

York: Wiley.

Lohr, S. L. (2009). *Sampling: design and analysis*. Pacific Grove: Duxbury Press.

Maccoby, E. E. (1999). *The two sexes: growing up apart, coming together*. Cambridge, MA:

Harvard University Press.

MacKinnon, D. P., Lockwood, C. M., Hoffman, J. M., West, S. G., & Sheets, V. (2002). A

comparison of methods to test mediation and other intervening variable effects.

Psychological Methods, *7*(1), 83–104.

Marshall, S. K., Tilton-Weaver, L. C., & Bosdet, L. (2005). Information management:

Considering adolescents' regulation of parental knowledge. *Journal of Adolescence*,

28(5), 633–647.

Muthén, B. O., & Muthén, L. K. (2012). *Mplus User's Guide* (7th ed.). Los Angeles, CA: Muthén

& Muthén.

Rosenfeld, L. B. (2000). Overview of the ways privacy, secrecy, and disclosure are balanced in

today's society. In S. S. Petronio (Ed.), *Balancing the secrets of private disclosures* (pp.3-

17). Mahwah, NJ: Lawrence Erlbaum Associates.

Rosenthal, D. A., Efklides, A., & Demetriou, A. (1988). Parental criticism and young adolescent

self-disclosure: A cross-cultural study. *Journal of Youth and Adolescence, 17*, 25–39.

Rote, W. M., Smetana, J. G., Campione-Barr, N., Villalobos, M., & Tasopoulos-Chan, M. (2012). Associations between Observed Mother-Adolescent Interactions and Adolescent Information Management. *Journal of Research on Adolescence*, *22*(2), 206–214.

Ryan, R. M., & Deci, E. L. (2000). Self-determination theory and the facilitation of intrinsic motivation, social development, and well-being. *The American Psychologist*, *55*(1), 68–78.

Sameroff, A. (2009). The Transactional model. In *The transactional model of development: How children and contexts shape each other* (Vol. xiv, pp. 3–21). Washington, DC, US: APA.

Schafer, J. L., & Graham, J. W. (2002). Missing data: our view of the state of the art. *Psychological Methods*, *7*(2), 147–177.

Sessa, F. M., Avenevoli, S., Steinberg, L., & Morris, A. S. (2001). Correspondence among informants on parenting: Preschool children, mothers, and observers. *Journal of Family Psychology*, *15*(1), 53–68.

Shrout, P. E., & Bolger, N. (2002). Mediation in experimental and nonexperimental studies: new procedures and recommendations. *Psychological Methods*, *7*(4), 422–445.

Smetana, J. G. (2011). *Adolescents, families, and social development: how teens construct their worlds*. New York: Wiley-Blackwell.

Smetana, J. G., & Metzger, A. (2008). Don't Ask, Don't Tell (Your Mom and Dad): Disclosure and Nondisclosure in Adolescent.parent relationships. In M. Kerr, H. Stattin, & R. C. M. E. Engels (Eds.), *What can parents do? New insights into the role of parents in adolescent problem behavior* (pp. 65–87). Chichester: John Wiley & Sons.

Smetana, J. G., Metzger, A., Gettman, D. C., & Campione☐Barr, N. (2006). Disclosure and Secrecy in Adolescent–Parent Relationships. *Child Development*, *77*(1), 201–217.

Soenens, B., Vansteenkiste, M., Luyckx, K., & Goossens, L. (2006). Parenting and adolescent

problem behavior: An integrated model with adolescent self-disclosure and perceived

parental knowledge as intervening variables. *Developmental Psychology*, *42*, 305–318.

Stattin, H., & Kerr, M. (2000). Parental Monitoring: A Reinterpretation. *Child Development*,

71(4), 1072–1085.

Tilton-Weaver, L. (2013). Adolescents' Information Management: Comparing Ideas About Why

Adolescents Disclose to or Keep Secrets from Their Parents. *Journal of Youth and*

Adolescence.

Tilton-Weaver, L. C., Kerr, M., Pakalniskeine, V., Tokic, A., Salihovic, S., & Stattin, H. (2010).

Open up or close down: How do parental reactions affect youth information management?

Journal of Adolescence, *33*(2), 333–346.

Tilton-Weaver, L. C., & Marshall, S. K. (2008). Adolescents' Agency in Information

Management. In M. Kerr, H. Stattin, & R. C. M. E. Engels (Eds.), *What can parents do?*

New insights into the role of parents in adolescent problem behavior (pp. 11–41).

Chichester: John Wiley & Sons.

Tilton-Weaver, L. C., Marshall, S. K., & Darling, N. (2013). What's in a Name? Distinguishing

Between Routine Disclosure and Self-Disclosure. *Journal of Research on Adolescence*,

24(4), 551–563.

Tokić, A., & Pećnik, N. (2011). Parental behaviors related to adolescents' self-disclosure:

Adolescents' views. *Journal of Social and Personal Relationships*, *28*(2), 201–222.

Tokić Milaković, A., & Pećnik, N. (2014). Parental Behaviors in the Context of Adolescent

Disclosure (PBAD): Instrument Development. *Journal of General Social Issues*, *23*(1),

67–85.

Villalobos Solís, M., Smetana, J. G., & Comer, J. (2015). Associations among solicitation,

relationship quality, and adolescents' disclosure and secrecy with mothers and

best friends. *Journal of Adolescence*, *43*, 193–205.

Yau, J. P., Tasopoulos☐Chan, M., & Smetana, J. G. (2009). Disclosure to Parents about

Everyday Activities Among American Adolescents From Mexican, Chinese, and

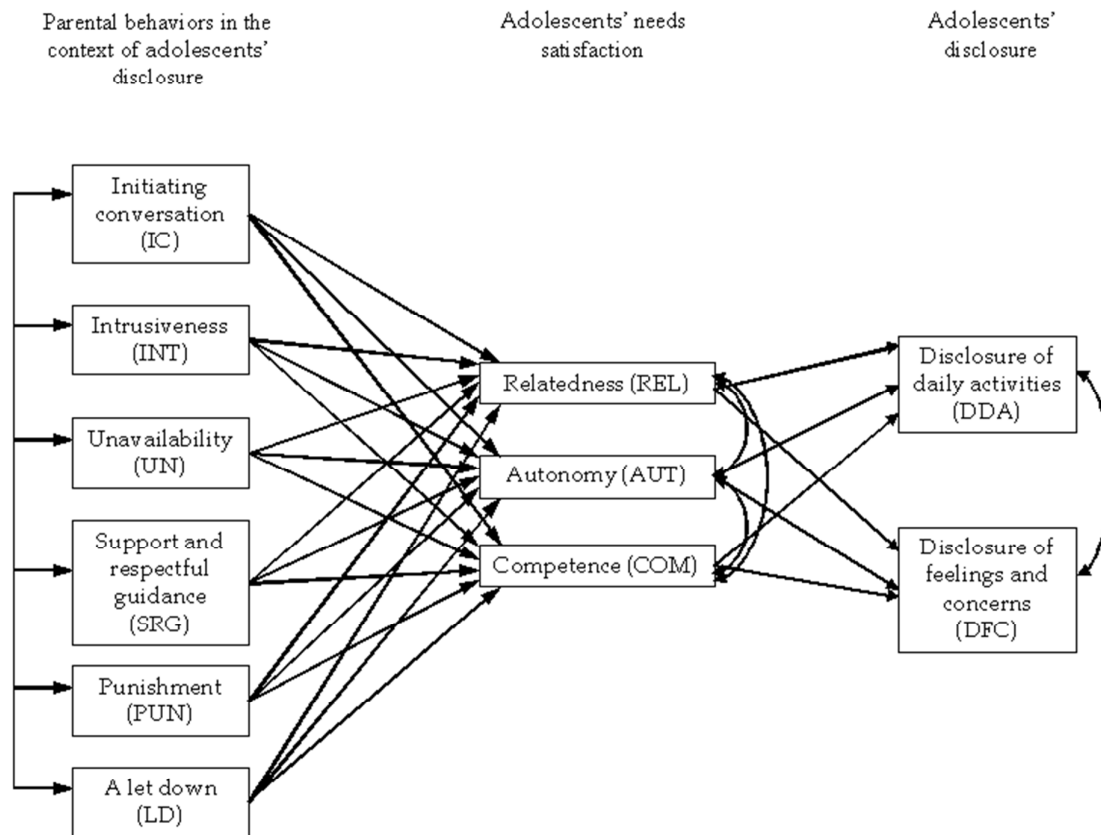European Backgrounds. *Child Development*, *80*(5), 1481–1498.

Figure 1. Partial mediation model explaining the relations between perceived parental behaviors and adolescent disclosure through adolescents' psychological needs satisfaction

Table 1

Intercorrelations between all measures used in the path analyses.

	IC	INT	UN	SRG	LD	PUN	REL	AUT	COM	DDA	DFC
IC	.	.10/**-.03**	**-.09**/-.38	.63/.70	-.11/-.31	-.13/-.34	.41/.54	.44/.47	.31/.44	.54/.61	.56/.65
INT	.19/**.09**	.	.59/.41	-.22/-.21	.57/.54	.49/.51	-.28/-.34	-.21/-.28	-.33/-.39	**.03**/-.11	**.04**/-.22
UN	-.14/-.29	.51/.39	.	-.37/-.49	.54/.55	.46/.59	-.40/-.52	-.30/-.38	-.35/-.44	-.10/-.34	-.11/-.45
SRG	.69/.70	-.16/-.15	-.33/-.44	.	-.38/-.54	-.31/-.49	.62/.66	.58/.59	.51/.58	.45/.53	.54/.62
LD	-.14/-.32	.51/.47	.52/.52	-.39/-.50	.	.47/.63	-.39/-.51	-.31/-.39	-.43/-.55	**-.06**/-.27	-.10/-.37
PUN	-.20/-.20	.41/.52	.47/.52	-.34/-.39	.52/.60	.	-.39/-.52	-.33/-.42	-.33/-.50	-.15/-.31	-.19/-.40
REL	.48/.49	-.21/-.26	-.40/-.48	.61/.65	-.44/-.49	-.43/-.46	.	.54/.61	.58/.63	.39/.50	.46/.60
AUT	.47/.45	-.16/-.21	-.31/-.38	.56/.59	-.29/-.45	-.37/-.43	.55/.56	.	.37/.49	.36/.46	.46/.52
COM	.34/.42	-.31/-.25	-.41/-.38	.56/.54	-.52/-.49	-.46/-.46	.59/.53	.47/.46	.	.16/.36	.29/.47
DDA	.62/.67	.10/**-.02**	**-.09**/-.32	.54/.56	-.10/-.28	-.16/-.37	.39/.49	.34/.41	.26/.35	.	.75/.76
DFC	.67/.71	**.06**/-.04	-.14/-.38	.65/.61	-.13/-.34	-.24/-.30	.48/.51	.41/.46	.32/.39	.78/.75	.

Note. Data for mothers are presented above the diagonal and for fathers below the diagonal (Boys/Girls). IC = initiating conversation; INT = intrusiveness; UN = unavailability; SRG = support and respectful guidance; LD = a let-down, PUN = punishment; REL = need-for-relatedness satisfaction; AUT = need-for-autonomy satisfaction; COM = need-for-competence satisfaction; DDA = disclosure of daily activities; DFC = disclosure of feelings and concerns. Bolded values represent non-significant correlations ($p > .05$).

Table 2

Means and standard deviations for all measures used in the path analyses

	Mothers		Fathers	
	Boys	Girls	Boys	Girls
Variable	M (SD)	M (SD)	M (SD)	M (SD)
IC	3.71 (.71)	3.98 (.68)	3.52 (.79)	3.54 (.82)
INT	2.07 (.96)	1.88 (.81)	1.89 (.86)	1.69 (.74)
UN	2.20 (.79)	2.19 (.76)	2.25 (.75)	2.31 (.79)
SRG	3.92 (.72)	4.14 (.63)	3.79 (.77)	3.92 (.74)
LD	1.96 (.79)	1.60 (.58)	1.91 (.72)	1.63 (.67)
PUN	1.77 (.67)	1.64 (.62)	1.68 (.66)	1.56 (.60)
REL	3.47 (.58)	3.66 (.51)	3.40 (.61)	3.48 (.62)
AUT	3.37 (.69)	3.54 (.61)	3.40 (.67)	3.48 (.64)
COM	3.24 (.65)	3.46 (.59)	3.28 (.65)	3.44 (.58)
DDA	3.25 (1.00)	3.65 (1.02)	3.06 (1.03)	2.99 (1.01)
DFC	3.27 (1.00)	3.66 (1.04)	3.10 (1.03)	2.87 (1.00)

Note. IC = initiating conversation; INT = intrusiveness; UN = unavailability; SRG = support and respectful guidance; LD = a let-down; PUN = punishment; REL = need-for-relatedness satisfaction; AUT = need-for-autonomy satisfaction; COM = need-for-competence satisfaction; DDA = disclosure of daily activities; DFC = disclosure of feelings and concerns.

Table 3

Standardized estimates for path coefficients in the proposed mediational model

	Regression path	Mothers (β)	Fathers (β)
Parental behaviors predicting adolescent needs satisfaction	IC→REL	.15***	.14***
	INT→REL	-.07*	-.02
	UN→REL	-.11***	-.12***
	SRG→REL	.39***	.40***
	LD→REL	-.06	-.10**
	PUN→REL	-.13***	-.16***
	IC→AUT	.15***	.14***
	INT→AUT	-.09**	-.03
	UN→AUT	-.02	-.04
	SRG→AUT	.43***	.38***
	LD→AUT	.01	.00
	PUN→AUT	-.11**	-.20***
	IC→COM	.11**	.08*
	INT→COM	-.14***	-.03
	UN→COM	-.02	-.02
	SRG→COM	.32***	.31***
	LD→COM	-.18***	-.27*** (-.16**)
	PUN→COM	-.08*	-.19***
Needs satisfaction predicting adolescent disclosure	REL→DDA	.19***	.13***
	AUT→DDA	.11**	.02
	COM→DDA	-.10**[s]	-.03
	REL→DFC	.19***	.12***
	AUT→DFC	.12***	.04
	COM→DFC	-.01	-.03
Parental behaviors predicting disclosure – direct links	IC→DDA	.42***	.46***
	INT→DDA	.01	.03
	UN→DDA	-.03	-.01
	SRG→DDA	.10*	.14***
	LD→DDA	.07*[s]	.06
	PUN→DDA	-.04	-.05
	IC→DFC	.35***	.45***
	INT→DFC	.06 (-.06)	.03
	UN→DFC	.01 (-.10**)	-.04
	SRG→DFC	.19***	.23***
	LD→DFC	.08*[s]	.09**[s]
	PUN→DFC	-.05	-.09**

Note. The estimates for boys and girls are the same; where the coefficients for boys and girls significantly differ, the estimates for girls are presented in brackets. [s] = coefficients reversed in sign indicate possible suppressor effect. IC = initiating conversation; INT = intrusiveness; UN = unavailability; SRG = support and respectful guidance; LD = a let-down; PUN = punishment; REL = need-for-relatedness satisfaction; AUT = need-for-autonomy satisfaction; COM = need-for-competence satisfaction; DDA = disclosure of daily activities; DFC = disclosure of feelings and concerns. *$p < .05$, **$p < .01$, ***$p < .001$.

Table 4

Significant indirect effects in the partial mediation model

Significant indirect effects	Mothers		Fathers	
	Daily activities (β)	Feelings and concerns (β)	Daily activities (β)	Feelings and concerns (β)
IC→REL→disclosure	.03**	.03**	.02**	.02*
UN→REL→disclosure	-.02**	-.02**	-.02*	-.01*
SRG→REL→disclosure	.07***	.07***	.05**	.05**
LD→REL→disclosure			-.01*	-.01*
PUN→REL→disclosure	-.02**	-.02**	-.02**	-.02*
IC→AUT→disclosure	.02*	.02*		
SRG→AUT→disclosure	.04*	.05**		
PUN→AUT→disclosure		-.01*		

Note. Estimates are the same for boys and girls. IC = initiating conversation; INT = intrusiveness; UN = unavailability; SRG = support and respectful guidance; LD = a let-down; PUN = punishment; REL = need-for-relatedness satisfaction; AUT = need-for-autonomy satisfaction; COM = need-for-competence satisfaction. $*p < .05$, $**p < .01$, $***p < .001$.