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# Parental Self-Efficacy and Intra- and Extra-Familial Relationships

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## Abstract

Relationships are at the heart of well-being. Parental self-efficacy emerges as a powerful construct for understanding parenting and parent–child relationships. However, person-centered approaches that allow identification of different family-specific configurations of mothers’ and fathers’ parental self-efficacy and potential within-family discrepancies remain scarce. Families are more than the sums of their parts, and holistic approaches are needed to deepen our understanding of potential family-level accumulation of relationship well-being and vulnerability. A latent profile analysis of 249 families of preadolescents identified four family profiles of parental self-efficacy: (1) low–low, (2) low–average, (3) high–average, and (4) high–high (a mother’s–a father’s parental self-efficacy within the family). We further applied the Mplus auxiliary function to explore what characterizes mothers’, fathers’, and their preadolescents’ intra- and extra-familial relationships within these profiles. Belonging to the balanced low parental self-efficacy family profile was associated with intra- and extra-familial relationship vulnerability: mothers, fathers, and preadolescents reported the highest social and emotional loneliness, parents perceived their family communication as less open, and preadolescents were evaluated as the least prosocial (in parent, teacher, and peer evaluations) and as the most antisocial (in parent evaluations). Mothers’, fathers’, and preadolescents’ intra- and extra-familial relationship well-being was the strongest in high parental self-efficacy family profiles. Promoting parental self-efficacy can be a promising way to enhance all family members’ relationship well-being. Moreover, as loneliness experiences accumulated in the balanced low parental self-efficacy family profile, efforts to tackle preadolescents’ loneliness should acknowledge the well-being of all family members.

**Keywords** Parental self-efficacy · Relationships · Family communication · Loneliness · Social competence

## Highlights

- Holistic approaches to family-specific configurations of mothers’ and fathers’ parental self-efficacy are needed.
- Balanced and discrepant family profiles of parental self-efficacy were identified through a latent profile analysis.
- Parents’ loneliness was the highest and family communication the least open in low parental self-efficacy profiles.
- Preadolescents’ loneliness was the highest and social competence the lowest in low parental self-efficacy profiles.
- Ensuring that parents feel efficacious and not left alone can help preadolescents establish meaningful relationships.

Meaningful and satisfactory relationships are at the heart of well-being (Baumeister & Leary, 1995; Osher et al., 2020). In preadolescence (10–14 years of age; Roeser et al., 2002), forming peer relationships and receiving acceptance are

vital social needs. Parents continue to have a crucial impact on their preadolescents’ social environments and relationships therein, although the importance of peers is starting to increase (Blakemore & Mills, 2014). Parents have varied resources in promoting their preadolescents’ positive development and intra- and extra-familial relationship well-being (Osher et al., 2020). Grounded in ecological transactional systems theory, we approach preadolescents’ well-being as embedded in the reciprocal relationships that they share with significant others while acknowledging the preadolescent’s active role as not just a recipient of influences (Bronfenbrenner & Morris, 2006; Osher et al., 2020; Sameroff, 1975, 2009). This approach allows the focus to

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be extended beyond individuals to capture the socially embedded nature of relationship well-being and vulnerability (Cantor et al., 2019; Osher et al., 2020).

*Parental self-efficacy beliefs* (PSE) refer to parents' confidence in their ability to successfully promote their child's development and overcome parenting challenges (Coleman & Karraker, 1998, 2000). PSE has been associated with positive parenting practices, such as open communication between parents and their children (Bandura et al., 2011) and age-appropriate parental involvement and monitoring (Shumow & Lomax, 2002). In their review, Albanese et al. (2019) refer to PSE emerging as a "key to healthy functioning in parents and children" (p. 334). Most studies on PSE have, however, focused on parents of 0–6-year-old children, and on mothers over fathers (Fang et al., 2021), which encouraged us to target the parents of pre-adolescents. Moreover, as discussed by Häfner et al. (2018), "families are not just the sum of their parts but are shaped by the specific combinations of multiple family characteristics" (p. 1405). For a more holistic and synergistic understanding of families, we adopted a person-centered approach that enables the identification of family-specific configurations of the mother's and father's PSE within the family, that is, family profiles of PSE (see Junttila & Vauras, 2014).

We were further interested in what characterizes mothers', fathers', and their preadolescents' *intra- and extra-familial relationships* within different family profiles of PSE. We all have a fundamental need to belong, and to establish and maintain meaningful relationships (Baumeister & Leary, 1995). It follows that if these needs are not adequately met, it severely threatens well-being and leads to vulnerability. Here, we apply the concept of relationships in a wide sense, referring to appraisals, interpretations, and competencies related to establishing and maintaining meaningful relationships, both within and outside the family context (see Osher et al., 2020). To that end, we approach intra- and extra-familial relationships through parents' and their preadolescents' loneliness experiences, family communication environments as perceived by mothers and fathers, and multisource evaluations of preadolescents' social competence.

*Loneliness* constitutes a painful emotional experience, resulting from not meaningfully and satisfactorily meeting the need to belong—that is, a discrepancy between desired and perceived social networks and close emotional attachments (Baumeister & Leary, 1995; Peplau & Perlman, 1982). Parents' loneliness experiences not only threaten their own well-being but can also increase their child's vulnerability to loneliness experiences (Salo et al., 2020), for instance, through more isolated family environments and less encouraged opportunities for social interactions (Solomon, 2000). The family communication environment,

then again, reflects "intrapersonal perceptions of interpersonal relationships" (Ritchie and Fitzpatrick, 1990, p. 523) as conceptualized through levels of conversation (i.e., whether open and frequent communication is encouraged among family members) and conformity (i.e., the degree of autonomous expression of ideas and expected obedience to parents). These, combined, reflect the communication schemata that parents model for their children regarding how to act in relationships (Koerner & Fitzpatrick, 2002, 2006). *Social competence* consists of a complex set of skills that are needed to interpret social situations and regulate one's own behaviors and emotions accordingly to achieve social goals in meaningful ways (Junttila et al., 2006). To that end, social competence is essential for "creating and maintaining meaningful relationships" (Salminen et al., 2022, p. 39).

In sum, we will identify family profiles based on different configurations of the mother's and father's PSE and examine whether these are associated with mothers', fathers', and their preadolescents' *intra- and extra-familial relationship well-being* (i.e., low loneliness experiences, open and frequent family communication, high social competence), or, on the other hand, *vulnerability* (i.e., high loneliness, restricted and less frequent family communication, low social competence). This is expected to contribute to understanding how family members' well-being or vulnerability can become entangled in families and how these processes are further embedded in parents' and their preadolescents' relationships outside the family context (Bronfenbrenner & Morris, 2006; Osher et al., 2020).

## Parental Self-Efficacy, Family Communication Environment, and Parents' Loneliness

Studies conducted through variable-centered approaches have established that parents with high PSE are likelier to exhibit positive parenting practices, such as being supportive and responsive, showing acceptance, and engaging in their children's lives (Ardelt & Eccles, 2001; Coleman & Karraker, 1998, 2000; Shumow & Lomax, 2002). Parents with low PSE, by contrast, have been shown to be more prone to controlling, withdrawn, and passive parenting (Coleman and Karraker, 1998; Jones & Prinz, 2005). However, less is known about associations between parental self-efficacy and parental perceptions of their family communication environments.

A family communication environment is traditionally captured through the degree of encouraged and open communication (i.e., conversation orientation) and the expected homogeneity of values (i.e., conformity orientation) (Koerner & Fitzpatrick, 2002, 2006; Ritchie &

Fitzpatrick, 1990). Treating these two orientations as dimensions (high to low), Ritchie and Fitzpatrick (1990) differentiated between four *family types*: 1) *Laissez-faire families* (low conversation, low conformity); children are afforded high levels of autonomy and freedom to make their own decisions, but they lack parental support, and discussions between family members are rare and limited; 2) *Protective families* (low conversation, high conformity); children are expected to obey rules set by their parents but are not included in family discussions and therefore have low autonomy; 3) *Pluralistic families* (high conversation, low conformity); children and parents engage in open discussion, and children are equally involved in family decision-making, with an emphasis on autonomy and individuality; and 4) *Consensual families* (high conversation, high conformity); striking a balance between open discussion and maintaining the family hierarchy, parents make the decisions but include children in discussing their rationales (Koerner & Fitzpatrick, 2002, 2006; Ritchie & Fitzpatrick, 1990). Overall, mothers tend to evaluate family communication higher on conversation orientation compared to fathers (Koerner & Fitzpatrick, 2002). The family communication environment can contribute to a child's tendency to communicate with others. According to Koerner and Fitzpatrick (2002), children in high conversation-oriented families tend to have better communication and problem-solving skills and greater preparedness to flexibly adapt to changing situations, and they are, overall, better prepared to develop good relationships with others.

Extra-familial relationship quality has further been associated with PSE. As an example, Junttila et al. (2007) hypothesized that the strong negative associations between parents' loneliness and their PSE (i.e., low PSE is associated with high loneliness, and vice versa) might indicate that "mothers and fathers who have friends and relatives to rely on and to share their problems and stressors with are more self-confident and trustful in their own competence and capabilities to be a good enough parent, and vice versa, parents with feelings of loneliness and maybe also depression may more easily feel non-efficacious and give up trying when the problems seem to accumulate" (p. 54). Weiss (1973) originally distinguished between social and emotional loneliness, and this division has since been widely established and used in research on loneliness (e.g., Hoza et al., 2000; Junttila & Vauras, 2009; Qualter & Munn, 2002). Social loneliness refers to a lack of desired social networks and peer groups, such as a hobby group, whereas emotional loneliness refers to a lack of desired intimate and close emotional attachments, such as a close friend (Weiss, 1973). Little is known about whether PSE is similarly associated with mothers' and fathers' loneliness in the two dimensions. As for family-level patterns,

Junttila et al. (2015) established that a parent's loneliness was a strong risk factor for their developing PSE, but a parent's loneliness did not, as such, affect the other parent's PSE within the family. These results among parents of toddlers suggest that associations between PSE and loneliness are likely to be rather individual and independent at the family level. However, more understanding is needed of parents with older children, such as pre-adolescents in the present study.

### Parental Self-Efficacy and Preadolescents' Social Competence and Loneliness

Relationships are known to shape development, and therefore targeting the quality of relationships has been suggested to be a powerful way to prevent intergenerational cycles of transmission of vulnerabilities and to promote inclusion and the equity of all (e.g., Cantor et al., 2019; Osher et al., 2020). Therefore, it is important to deepen our understanding of family-level mechanisms that can underlie preadolescents' relationship well-being and vulnerability. Preadolescents and their parents are seen to reciprocally influence one another. Thereby, those parents who feel competent in their parenting may experience more positive affect, whereas it can be more difficult to experience confidence if one does not receive positive feedback through a child's positive behaviors (Ardelt & Eccles, 2001; Coleman & Karraker, 1998, 2000). Coleman and Karraker (2000) established that mothers with higher PSE perceived their school-aged children to be more sociable. A child's challengingly experienced behavior, then again, can undermine a parent's confidence in their own parenting abilities (Ardelt & Eccles, 2001; Jones & Prinz, 2005). It has also been presumed that low PSE can increase a parent's vigilance toward a child's difficult behavior (Coleman & Karraker, 1998).

Previous research on the associations between PSE and children's social competence has mainly been conducted through variable-centered approaches (e.g., Junttila et al., 2007). Among the few existing studies that have adopted a person-centered approach to examining mothers' and fathers' PSE within families is a study by Junttila and Vauras (2014). They identified balanced low, mediocre, and strong PSE family profiles and examined how these were associated with children's social competence. In their study, most associations between family profiles of PSE and children's social competence were statistically significant, suggesting that those children from low PSE family profiles were evaluated with the lowest prosocial and the highest antisocial behavior (in peer, parent, teacher, and self-evaluations) compared to their peers in other family profiles. However, as only balanced family profiles were identified in a study by Junttila and Vauras (2014), potential family-level

discrepancies in a mother's and a father's PSE, and their role in understanding associations between family profiles of PSE and children's social competence, were not targeted.

Research is even scarcer regarding associations between family-level PSE and preadolescents' social and emotional loneliness. In general, it has been shown that the family context can play a role in children's vulnerability to loneliness experiences. As examples, in a study by Junttila et al. (2007), PSE was associated with children's peer-evaluated social competence, which was further associated with children's loneliness experiences. It has further been shown that parents' loneliness can be reflected in their children's loneliness through gender- and dimension-specific pathways (Salo et al., 2020). Therefore, the well-being of parents and the resources that they hold in socializing their children, and in providing opportunities for social encounters, can be relevant for understanding the mechanisms underlying preadolescents' loneliness. We expect that our study makes a wholly new contribution to research on such mechanisms by examining the associations between family-level configurations of mothers' and fathers' PSE and preadolescents' longitudinal social and emotional loneliness.

## The Present Study

As discussed, a vast research literature indicates that PSE emerges as a powerful construct for understanding parent-child relationships and parents' and their children's well-being (for reviews, see Albanese et al., 2019; Coleman & Karraker, 1998). However, how different configurations of a mother's and a father's PSE within a family are associated with parents' and their preadolescents' intra- and extra-familial relationships remains scarcely mapped. To contribute to this gap in the research, we address the following three research questions:

*RQ1: What kinds of family profiles of parental self-efficacy can be identified among mothers and fathers of preadolescents?*

A study by Junttila and Vauras (2014) identified balanced family profiles of low, mediocre, and strong PSE. We explore the possibility that discrepant family profiles of PSE (i.e., with different levels of the mother's and father's PSE within the family) could be identified along with the balanced ones. In general, mothers tend to report higher PSE than fathers (e.g., Junttila et al., 2015). Moreover, as PSE is a subjective experience of a parent, we presume that differences in the levels of a mother's and a father's PSE are possible even within the same family.

*RQ2: What characterizes mothers' and fathers' perceived family type and social and emotional loneliness in the identified family profiles of parental self-efficacy?*

There is a lack of prior evidence on the associations between family profiles of PSE and mothers' and fathers' perceived family type. Prior research on associations between PSE and parenting practices offers us the basis for a general expectation that high PSE would be associated with more positive parenting practices, such as shared discussions and responsiveness, while lower PSE would be linked with more controlling parenting behaviors (Ardelt & Eccles, 2001; Coleman & Karraker, 1998, 2000; Jones & Prinz, 2005; Shumow & Lomax, 2002). To that end, it can be presumed that high PSE would be associated with family types that encourage open communication (i.e., consensual and pluralistic), whereas low PSE would be associated with family types with less frequent and more restricted communication (i.e., protective and laissez-faire). Previous studies have further offered a basis for general expectations that low PSE would be associated with higher loneliness experiences, and that associations between PSE and loneliness are relatively independent for mothers and fathers at the family level (Junttila et al., 2015).

*RQ3: What characterizes preadolescents' longitudinal social competence and social and emotional loneliness in the identified family profiles of parental self-efficacy?*

Based on a study by Junttila and Vauras (2014), we can hypothesize that preadolescents in family profiles with low PSE would be assessed as the least prosocial and as the most antisocial, compared to their peers in other family profiles. However, we could not form any specific expectations regarding the discrepant family profiles of PSE. As for the associations between family profiles of PSE and preadolescents' social and emotional loneliness, we could not form specific expectations due to the scarcity of research. However, previous research provides general expectations that targeting family-level processes can be helpful for understanding children's vulnerability to loneliness experiences. For instance, indirect associations have been found between PSE and children's loneliness through children's social competence (Junttila et al., 2007). We expect to present a wholly new contribution to the research on potential associations between family profiles of PSE and preadolescents' longitudinal social and emotional loneliness.

## Method

### Participants

Six mainstream elementary schools from one medium-sized city and surrounding rural communities volunteered to participate in this project. Parents were informed about the purpose of the study, and they gave written consent for their own and their preadolescents' participation. As our focus was on family-level configurations of mothers' and fathers' PSE, preadolescents living in single-parent families and those whose parents provided no information about PSE (21.7% of families) were omitted from the original data ( $N = 318$ ). We did not differentiate in between nuclear (87.1%) and reconstituted families with a stepmother or stepfather in the household (12.9%), as the identified latent profiles did not differ significantly with family structure (stepmother,  $p = 0.390$ ; stepfather,  $p = 0.249$ ). Importantly, PSE among excluded mothers and fathers did not differ significantly from those who were included (nurturance:  $p = 0.714/0.795$ ; recreation:  $p = 0.581/0.515$ ; participation:  $p = 0.728/0.058$ ; discipline:  $p = 0.969/0.947$  for mothers/fathers).

The final sample comprised 249 preadolescents, who were in fourth grade when the study began (i.e., 10–11 years of age). Their mothers were aged 28–52 years ( $M = 40.2$ ), and fathers 28–62 years ( $M = 42.0$ ). The final sample included slightly more girls (50.6%) than boys (49.4%); in the original sample ( $N = 318$ ), there were slightly fewer girls (47.6%) than boys (52.4%). The identified family profiles of PSE did not significantly differ based on preadolescent gender ( $p = 0.883$ ). The mothers' mean age ( $M = 39.9$ ) was slightly lower in the original sample, but the identified family profiles did not significantly differ in mothers' age ( $p = 0.251$ ). We further compared mothers' and fathers' PSE with a larger data set (mothers  $N = 876$ ; fathers  $N = 696$ ) of Finnish parents with children of similar age (see Junttila & Vauras, 2014). Parents in our study evaluated their PSE as slightly higher in all subscales of PSE (nurturance, discipline, recreation, and participation), but the effect sizes were trivial ( $< 0.20$ ) to small ( $< 0.50$ ) in magnitude, except for a large effect size ( $> 0.80$ ) in fathers' nurturance (see Cohen, 1988). Given that we aimed to identify family profiles of PSE based on all four subscales, acknowledging both parents, the parents within our study did not, overall, significantly differ from those within the larger data set (i.e., Junttila & Vauras, 2014). The prevalence of loneliness in the study area was 8.6%, which is close to the prevalence of loneliness in Finland as a whole (9.1%; Kaikkonen et al., 2015).

### Measurements

Mothers and fathers completed questionnaires to separately evaluate their PSE, family communication environment, and social and emotional loneliness experiences at the first time point (i.e., when preadolescents were in fourth grade).

#### Parental Self-efficacy Beliefs

We applied a modified and translated version of the Self-Efficacy for Parenting Tasks Index (*SEPTI*) (Coleman & Karraker, 2000), validated for Finnish parents of fourth graders by Junttila et al. (2007), to examine parental self-efficacy. The modified scale comprises 21 items, divided into four subscales: (1) nurturance (e.g., "I know I'm not there enough emotionally for my child"); (2) discipline (e.g., "I have more difficulties with discipline than other aspects of parenting"); (3) recreation (e.g., "I know I should care more about my child's social life"); and (4) participation (e.g., "I am not as involved in my child's school work as I think I should be"). Each item was rated on a Likert scale ranging from *strongly agree* (1) to *strongly disagree* (6). In our study, Cronbach's alpha values for the subscales were 0.77 for nurturance, 0.71 for discipline, 0.67 for recreation, and 0.68 for participation.

#### Family Communication Environment

We applied a modified and translated version of the Revised Family Communication Pattern Instrument (*RFCP*; parent version; Ritchie & Fitzpatrick, 1990; Koerner & Fitzpatrick, 2002) to examine the family communication environment. The original RFCP consists of 26 Likert-type items measuring conversation (15 items) and conformity (11 items) orientations on a five-point scale. The modified version comprised five items measuring conversation (e.g., "We often talk as a family about things we have done during the day"), and five measuring conformity (e.g., "When anything really important is involved, I expect my child to obey me without question") orientations. Each item was rated on a Likert scale ranging from *never* (1) to *often* (4). In our study, Cronbach's alpha values for the orientations were 0.62 for conversation and 0.72 for conformity.

#### Parents' Loneliness Experiences

We applied a translated and modified version (Junttila et al., 2007) of the Revised UCLA (University of California, Los Angeles) Loneliness Scale (Russell et al., 1980) to examine parents' loneliness experiences. The scale consists of six items measuring social (e.g., "I feel isolated from others"), and six items measuring emotional (e.g.,

“No one really knows me well”) dimensions of loneliness. Items were rated on a Likert scale, ranging from *never* (1) to *often* (4), indicating the intensity and frequency of loneliness experiences. In our study, Cronbach’s alpha values for the dimensions were 0.80 for social and 0.77 for emotional loneliness.

Parents jointly evaluated their preadolescents’ social competence at the first and last time points (fourth and sixth grade), with 81.1 percent returning valid data for prosocial and 80.3 percent for antisocial dimensions at both time points. Preadolescents’ self-evaluations of social competence were collected during normal school lessons across fourth through sixth grade. In total, 88.4 percent of the preadolescents returned valid data for prosocial and 87.6 percent for antisocial dimensions at all three time points (fourth, fifth, and sixth grade). Peers evaluated their classmates’ social competence during normal school lessons, and 94.0 percent returned valid data on peer-evaluated prosocial and antisocial behavior for the three time points. Classroom teachers evaluated their students’ social competence, returning valid data for 74.7 percent of the preadolescents at all three time points for prosocial and antisocial dimensions.

### Preadolescents’ Social Competence

We applied the Multisource Assessment of Children’s Social Competence Scale (MASCS) (Junttila et al., 2006) to examine preadolescents’ social competence. The scale comprises 15 items divided into four factors in two dimensions: the prosocial dimension comprises cooperation skills (e.g., “Effectively participates in group activities”) and empathy (e.g., “Is sensitive to the feelings of others”), and the antisocial dimension impulsivity (e.g., “Has a short fuse”) and disruptiveness (e.g., “Argues and quarrels with peers”). Items were rated on a Likert scale ranging from *never* (1) to *very frequently* (4). In our study, Cronbach’s alphas for the prosocial dimension for evaluators over the time points were as follows: self-evaluation  $0.82 < \alpha < 0.85$ , peer evaluation  $0.96 < \alpha < 0.97$ , teacher evaluation  $0.89 < \alpha < 0.92$ , and parent evaluation 0.84/0.87; and for the antisocial dimension: self-evaluation  $0.83 < \alpha < 0.87$ , peer evaluation  $0.95 < \alpha < 0.96$ , teacher evaluation  $0.91 < \alpha < 0.93$ , and parent evaluation 0.83/0.85.

Preadolescents further evaluated their loneliness experiences through questionnaires during normal school lessons, and 86.7 percent returned valid data for social and 86.3 percent for emotional loneliness at all five time points across fourth through sixth grade.

### Preadolescents’ Loneliness Experiences

We applied the Finnish translated and validated version (Junttila & Vauras, 2009) of the Peer Network and Dyadic

Loneliness Scale (PNDL; Hoza et al., 2000) to assess preadolescents’ loneliness. Preadolescents rated their loneliness through statements by selecting which of the two options described them best (e.g., “Some students feel like they really fit in with others, BUT some students don’t feel like they fit in with others”), and then specified whether the description they chose fit them *very well* or *quite well*. Item scores varied from *very low loneliness* (1) to *very high loneliness* (4). Preadolescents who chose the statement “Some students don’t feel like they fit in with others” and further specified that the description fitted them *very well* were scored with *very high loneliness* (4); those who responded *quite well* to the same statement were scored with *high loneliness* (3). The Finnish version of the PNDL comprises five items for *social loneliness* and five items for *emotional loneliness*. In our study, Cronbach’s alphas for the dimensions and across time points were  $0.83 < \alpha < 0.89$  for social and  $0.78 < \alpha < 0.89$  for emotional loneliness.

### Analytical Procedures

We counted the mean scores for each variable, and cases where fewer than half of the scores on a specific dimension of the variable were missing were imputed from the given scores for inclusion in the analysis. Skewness ranged between  $-2.0$  and  $2.0$ , and kurtosis between  $-7.0$  and  $7.0$ , which means that both were within reasonable limits (Curran et al., 1996).

We first controlled whether the division into four family types (high vs. high to high vs. low conversation [COM] and conformity [CON] orientation), as established by previous research (Koerner & Fitzpatrick, 2002; Ritchie & Fitzpatrick, 1990), fit our data by running a K-means cluster analysis for a four-cluster solution. We identified four family types, aligning with previous research, for both mothers’ and fathers’ perceptions separately, with standardized scores higher than 0 indicating that the orientation is above average (i.e., high), whereas those lower than 0 indicated that the orientation is below average (i.e., low): 1) *Laissez-faire* (13.2% of mothers/17.6% of fathers, with standardized scores COM  $-1.56/-1.04$ , CON  $-0.51/-0.55$  for mothers/fathers); 2) *Protective* (17.3%/27.8%, COM  $-0.91/-0.76$ , CON 0.97/0.92); 3) *Pluralistic* (13.6%/10.2%, COM 0.48/0.74, CON  $-1.75/-1.85$ ); and 4) *Consensual* (55.9%/44.4%, COM 0.51/0.71, CON 0.25/0.06) families.

To address our first research question, we conducted a latent profile analysis (LPA) using Mplus software version 8.0 (Muthén & Muthén, 1998-2015), to identify different family-level configurations of mothers’ and fathers’ PSE. We ran the LPA model as a mixture model, with maximum likelihood with robust standard errors

(MLR) as the estimation method, and 500 and 50 as random start values to ensure solution validity (Geiser, 2013). We fitted LPA models with increasing numbers of groups to the data, and used log-likelihood (Log L.), the Akaike information criterion (AIC), the Bayesian information criterion (BIC), and Vuong-Lo-Mendell-Rubin likelihood ratio tests to compare the models with different numbers of PSE profiles. Smaller AIC and BIC estimates indicated a better model fit (Geiser, 2013), and an entropy value above 0.80 indicated the distinctness and reliability of the latent classes (Rost, 2006). Moreover, a significant  $p$ -value ( $<0.05$ ) in the Vuong-Lo-Mendell-Rubin likelihood ratio test indicated that the model fitted the data better than a model with one fewer group (Nylund et al., 2007; Walrath et al., 2004). We also acknowledged latent class size, interpretability, and theoretical justification when choosing between the models (Muthén, 2003).

To address our second research question, which characterizes mothers' and fathers' loneliness experiences and perceived family types across the identified family profiles, we applied the Mplus auxiliary function and treated standardized mean scores as auxiliary variables to indicate their relatedness to grouping variables (Marsh et al., 2009). Thereby, we were able to test the equality of means of each continuous variable (i.e., social and emotional loneliness separately for mothers and fathers) across the family profiles, and to account for the probability that a particular case would fall into a particular family profile for categorical variables (i.e., family types as perceived by mothers and fathers), with  $p < 0.05$  indicating a statistically significant difference between the family profiles (Muthén & Muthén, 2008). The auxiliary function enabled us to consider separately the characteristics of mothers and fathers on each criterion variable within the profiles (Marsh et al., 2009). To address our third research question, that is, what characterizes preadolescents' longitudinal loneliness and social competence in the identified family profiles of parental self-efficacy, we first counted standardized longitudinal mean scores for preadolescents' social and emotional loneliness across the five time points, for teacher-, peer-, and self-evaluated prosocial and antisocial behaviors across three time points, and for parent-evaluated prosocial and antisocial behavior across two time points. We then treated these standardized longitudinal mean scores as continuous auxiliary variables. This provided us with the mean scores for each variable across the family profiles of PSE, with  $p$ -values below 0.05 indicating statistically significant differences in preadolescents' longitudinal social and emotional loneliness and prosocial and antisocial behaviors between the family profiles of PSE.

## Results

We first present the descriptive statistics for parental self-efficacy, family communication patterns, and parents' loneliness experiences in Table 1, along with the  $t$ -test results and Cohen's  $d$  (effect size) for differences between mothers' and fathers' evaluations. Descriptive statistics for preadolescents' social competence and loneliness experiences are then presented in Table 2, along with the  $t$ -test results and Cohen's  $d$  for differences between longitudinal mean scores of self-, teacher-, peer-, and parent-evaluated prosocial and antisocial behaviors, and between longitudinal mean scores of social and emotional loneliness. Due to the multiplicity of items, we used mean scores here; more detailed descriptive statistics are available on request from the first author.

Mothers evaluated their parental self-efficacy significantly higher than did fathers on all subscales, but the difference in the subscale of discipline was only trivial due to a small effect size (Cohen, 1988). Mothers further perceived family conversation orientation higher and conformity orientation lower than fathers did, however with only a small magnitude in differences in the latter. Additionally, mothers reported lower social and emotional loneliness compared to fathers. (Table 1) Parents evaluated their preadolescent's prosocial behavior significantly higher than other evaluators did, with large differences in effect sizes for teacher- and peer-, and medium effect size differences for self-evaluations. Parental evaluations of antisocial behavior were significantly higher than those of other evaluators, with large effect size differences for teacher, peer, and self-evaluations. (Table 2) Mothers' PSE significantly correlated with all the study variables, except for teacher-, peer-, and self-evaluated antisocial behavior; fathers' PSE exhibited the same exceptions, and fathers' PSE did not correlate with mothers' conformity orientation, preadolescents' emotional loneliness, or with self-evaluated prosocial behavior. Detailed correlations for all variables are available from the first author upon request.

### Latent Profiles of Family-Level Configurations of Mother's and Fathers' Parental Self-Efficacy

We ran latent profile analysis to identify family profiles of PSE, characterized by distinctive family-level patterns of the mother's and father's PSE. We summarized the statistics for the model fits for the tested latent profile solutions in Table 3. The three-class solution identified three balanced family profiles of PSE: low, average, and high. The four-class solution identified two discrepant family profiles, along with two balanced ones. The five-class solution split the smallest class in half, producing two



**Table 1** Descriptive Statistics for Parental Self-Efficacy, Family Communication Environment, and Loneliness, and Differences between Mothers and Fathers

	Parental self-efficacy				Family communication environment		Parents' loneliness	
	EI	PA	DC	RS	COM	CON	SL	EL
<i>M (SD)</i>								
Mothers	5.05 (0.60)	4.61 (0.72)	4.80 (0.74)	4.69 (0.75)	3.64 (0.36)	3.07 (0.44)	1.57 (0.49)	1.51 (0.39)
Fathers	4.57 (0.76)	4.31 (0.73)	4.76 (0.74)	4.30 (0.78)	3.38 (0.44)	3.12 (0.39)	1.68 (0.46)	1.67 (0.46)
Min/Max								
Mothers	3.17/6.00	2.33/6.00	3.00/6.00	2.50/6.00	2.20/4.00	1.20/4.00	1.00/3.67	1.00/3.17
Fathers	1.83/6.00	1.83/6.00	2.80/6.00	1.25/6.00	1.60/4.00	1.20/4.00	1.00/3.17	1.00/3.33
Skewness								
Mothers	-0.47	-0.21	-0.46	-0.31	-1.27	-0.83	1.50	1.38
Fathers	-0.67	-0.16	-0.43	-0.48	-0.62	-0.71	0.66	0.85
Kurtosis								
Mothers	-0.23	-0.52	-0.58	-0.26	1.84	1.17	2.85	2.62
Fathers	1.07	0.11	-0.46	0.85	0.35	1.81	0.18	0.74
Differences								
<i>p</i>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>
Cohen's <i>d</i>	0.70	0.41	0.05	0.51	0.65	-0.12	-0.23	-0.38

Statistically significant differences ( $p < 0.05$ ) are bolded

All presented figures are mean scores

*EI* nurturance, *PA* participation, *DC* discipline, *RS* recreation, *COM* conversation orientation, *CON* conformity orientation, *SL* social loneliness, *EL* emotional loneliness

**Table 2** Descriptive Statistics for Preadolescents' Social Competence and Loneliness Experiences, and Differences Between Evaluators and Dimensions of Loneliness

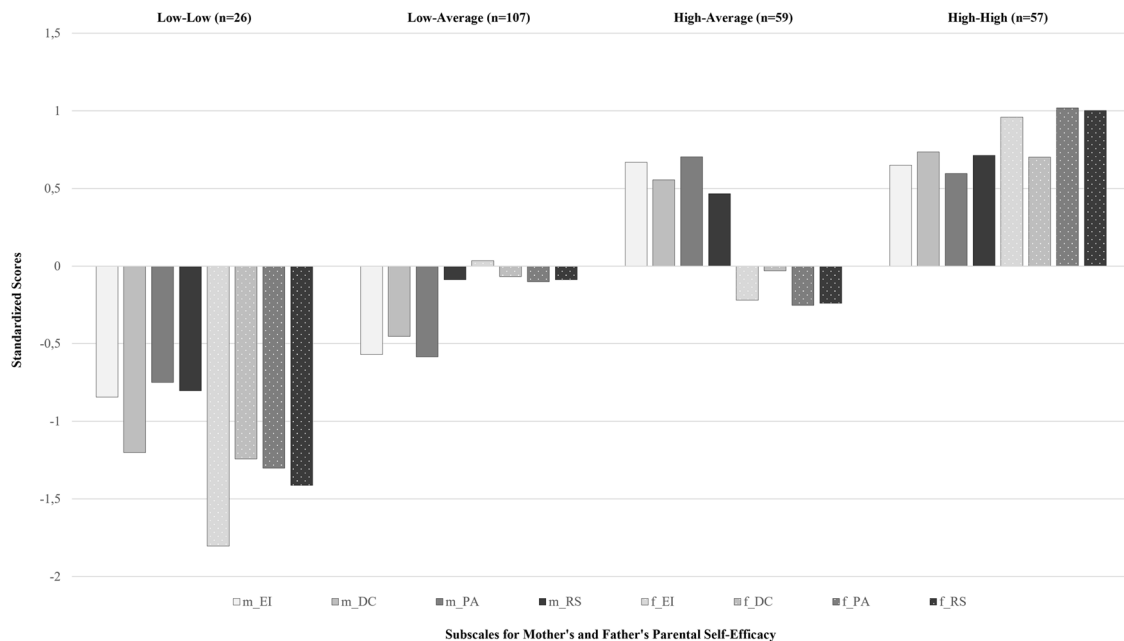
	<i>M</i>	<i>SD</i>	Min	Max	Skewness	Kurtosis	Differences	<i>p</i>	Cohen's <i>d</i>
Prosocial behavior									
Parent evaluations <sup>a</sup>	3.25	0.37	1.95	4.00	-0.19	0.23	Parent <sup>a</sup> -teacher <sup>b</sup>	<b>0.000</b>	0.90
							Parent <sup>a</sup> -peer <sup>b</sup>	<b>0.000</b>	1.62
							Parent <sup>a</sup> -self <sup>b</sup>	<b>0.000</b>	0.50
Teacher evaluations <sup>b</sup>	2.85	0.51	1.64	3.97	-0.20	-0.75	Teacher <sup>b</sup> -peer <sup>b</sup>	<b>0.000</b>	0.32
							Teacher <sup>b</sup> -self <sup>b</sup>	<b>0.000</b>	-0.54
Peer evaluations <sup>b</sup>	2.72	0.28	1.91	3.58	-0.33	0.47	Peer <sup>b</sup> -self <sup>b</sup>	<b>0.000</b>	-1.22
Self-evaluations <sup>b</sup>	3.08	0.31	2.17	3.87	-0.22	0.10			
Antisocial behavior									
Parent evaluations <sup>a</sup>	1.95	0.36	1.00	3.10	0.21	0.66	Parent <sup>a</sup> -teacher <sup>b</sup>	<b>0.000</b>	0.85
							Parent <sup>a</sup> -peer <sup>b</sup>	<b>0.000</b>	0.90
							Parent <sup>a</sup> -self <sup>b</sup>	<b>0.008</b>	0.87
Teacher evaluations <sup>b</sup>	1.56	0.54	1.00	3.47	1.33	1.45	Teacher <sup>b</sup> -peer <sup>b</sup>	<b>0.000</b>	-0.23
							Teacher <sup>b</sup> -self <sup>b</sup>	<b>0.000</b>	-0.18
Peer evaluations <sup>b</sup>	1.66	0.28	1.17	3.01	1.38	2.83	Peer <sup>b</sup> -self <sup>b</sup>	<b>0.000</b>	0.06
Self-evaluations <sup>b</sup>	1.64	0.35	1.00	2.70	0.44	-0.31			
Loneliness									
Social loneliness <sup>c</sup>	1.58	0.48	1.00	3.48	1.40	2.18	Social <sup>c</sup> -emotional <sup>c</sup>	<b>0.000</b>	-0.12
Emotional loneliness <sup>c</sup>	1.64	0.54	1.00	3.76	1.30	1.99			

Statistically significant differences ( $p < 0.05$ ) are bolded. All presented figures are longitudinal mean scores: <sup>a</sup>fourth and sixth grade; <sup>b</sup>fourth, fifth, and sixth grade; <sup>c</sup>five time points across fourth through sixth grade

**Table 3** Statistics for LPA Model Fit: Latent Profile Analysis for Identifying Family Profiles of Parental Self-Efficacy

Family profile model	Log likelihood	AIC	BIC	Class Proportions	Entropy	Average latent class posterior probabilities	Vuong-Lo-Mendell Test
1 Profile	-2811.37	5654.73	5711.01	1.00	1.0	1.0	n/a
2 Profiles	-2632.18	5314.35	5402.29	0.49/0.51	0.80	0.95/0.95	0.00
3 Profiles	-2576.43	5220.863	5340.456	0.47/0.45/0.08	0.82	0.92/0.94/0.84	0.21
4 Profiles	-2526.27	5138.538	5289.789	0.10/0.43/0.24/0.23	0.81	0.95/0.82/0.93/0.89	0.01
5 Profiles	-2505.99	5115.981	5298.888	0.05/0.06/0.43/0.24/0.22	0.85	0.91/0.94/0.94/0.84/0.90	0.24

AIC Akaike's Information Criterion, BIC Bayesian Information Criterion



**Fig. 1** Latent Profile Analysis: Family-Level Configurations of Mothers' and Fathers' Parental Self-Efficacy. m mother, f father, EI nurturance, DC discipline, PA participation, RS recreation

small classes with fewer than 15 cases in each, with differences in the subscales of mothers' PSE. We found that the four-class solution was better than the five-class solution in terms of its interpretability, and it was also clearer for labeling the family profiles. The four-class solution further proved more informative compared to the three-class solution, as it provided us with relevant insights into discrepant profiles (i.e., different levels of mothers' and fathers' PSE) along with balanced ones. BIC, class proportions, and Vuong-Lo-Mendell-Rubin likelihood ratio tests further supported the four-class solution. Thus, we adopted the four-class solution based on its interpretability and novel insights, as well as support through the previously mentioned model fit statistics.

We labeled the family profiles based on whether a mother's and a father's PSE was below, at, or above average within the data—that is, applying standardized values. The first part of each label refers to the level of a mother's

PSE, and the latter one to that of a father's within the family, as follows: (1) low–low (10.4%), (2) low–average (43.0%), (3) high–average (23.7%), and (4) high–high (22.9%) family profiles of PSE. Fathers' PSE was at an average level in two of the profiles, but slightly lower in high–average, compared to low–average, especially on the subscale of nurturance. Mothers' PSE was below average in two of the profiles, but it was clearly lower in low–low compared to the low–average family profile, especially on subscales of discipline and recreation. We present detailed illustrations of these family profiles of PSE in Fig. 1.

### Mothers and Fathers: Associations between Family Profiles of PSE, Family Type, and Loneliness

Overall, mothers' and fathers' perceptions of family type significantly differed across the identified family profiles of PSE ( $p < 0.001$ ). We present the results of the auxiliary

**Table 4** Family Types as Perceived by Mothers and Fathers Across the Family Profiles of Parental Self-Efficacy

Mothers	Family types across family profiles of parental self-efficacy (%)					Differences between the family profiles of parental self-efficacy							
	Low-Low	Low-Average	High-Average	High-High	Mothers	1 vs. 2	1 vs. 3	1 vs. 4	2 vs. 3	2 vs. 4	3 vs. 4	Overall	
Family types	28.5	21.7	0.0	4.4		$\chi^2$ (3)	$\chi^2$ (3)	$\chi^2$ (3)	$\chi^2$ (3)	$\chi^2$ (3)	$\chi^2$ (3)	$\chi^2$ (9)	
Laissez-faire	27.5	30.3	1.8	4.8	1.09	19.06	14.66	74.93	43.43	6.23	116.57		
Protective	9.3	4.7	15.5	31.0	<i>p</i>	<i>p</i>	<i>p</i>	<i>p</i>	<i>p</i>	<i>p</i>	<i>p</i>	<i>p</i>	
Pluralistic	34.7	43.3	82.7	59.8	0.779	<b>0.000</b>	<b>0.002</b>	<b>0.000</b>	<b>0.000</b>	<b>0.101</b>	<b>0.000</b>		
Family types	Low-Low	Low-Average	High-Average	High-High	Fathers	1 vs. 2	1 vs. 3	1 vs. 4	2 vs. 3	2 vs. 4	3 vs. 4	Overall	
Laissez-faire	36.3	15.7	28.4	1.7		$\chi^2$ (3)	$\chi^2$ (3)	$\chi^2$ (3)	$\chi^2$ (3)	$\chi^2$ (3)	$\chi^2$ (3)	$\chi^2$ (9)	
Protective	55.3	29.9	30.2	9.4	30.99	6.64	76.89	1.72	20.23	17.73	119.42		
Pluralistic	0.0	7.9	5.0	24.0	<i>p</i>	<i>p</i>	<i>p</i>	<i>p</i>	<i>p</i>	<i>p</i>	<i>p</i>	<i>p</i>	
Consensual	8.4	46.5	36.4	64.9	<b>0.000</b>	0.084	<b>0.000</b>	0.633	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	

Statistically significant differences ( $p < 0.05$ ) are bolded. 1 = low-low, 2 = low-average, 3 = high-average, 4 = high-high family profile of parental self-efficacy

variable analysis for associations between family profiles of PSE and family type as perceived by mothers and fathers in Table 4. The majority of the mothers in the high-high and high-average family profiles evaluated their family type as consensual (59.8/82.7%), whereas mothers in the balanced low family profile had broadly equal probability in evaluating their family type as laissez-faire, protective, or consensual (28.5/27.5/34.7%, respectively). The majority of the fathers in the balanced low family profile perceived their family type as protective (55.3%), followed by laissez-faire (36.3%), with only 8.4 percent of perceptions falling into high conversation-oriented family types (i.e., consensual or pluralistic). Fathers in the high-high family profile, then again, most typically perceived their family type as consensual (64.9%), with only 11.1 percent of evaluations falling into low conversation-oriented family types (i.e., protective and laissez-faire). Most differences between family profiles of PSE and family types were statistically significant for mothers ( $p < 0.010$ ) and fathers ( $p < 0.001$ ), with few exceptions (see Table 4).

Mothers' and fathers' social and emotional loneliness significantly differed across the identified family profiles of PSE ( $p < 0.001$ ). We present the results of the auxiliary variable analysis for associations between family profiles of PSE and parents' social and emotional loneliness in Table 5. Mothers in the balanced low family profile reported the highest, and mothers in the high-high family profile the lowest social and emotional loneliness experiences. Similarly, fathers in the balanced low profile reported the highest, and fathers in the balanced high profile the lowest social and emotional loneliness. Most differences between profiles were statistically significant for mothers ( $p < 0.05$ ) and fathers ( $p < 0.05$ ), with few exceptions (see Table 5).

### Preadolescents: Associations between Family Profiles of PSE, Social Competence, and Loneliness

We further examined preadolescents' social competence and loneliness in the identified PSE family profiles. As discussed, we treated longitudinal standardized mean scores of preadolescents' social and emotional loneliness and prosocial and antisocial behavior as auxiliary variables to capture their relatedness to different family profiles of PSE; we present these results in detail in Table 6.

We found statistically significant differences in preadolescents' longitudinal teacher- ( $p < 0.001$ ), peer- ( $p < 0.001$ ), and parent-evaluated ( $p < 0.001$ ) prosocial behavior and parent-evaluated antisocial behavior ( $p < 0.01$ ) across the identified family profiles of PSE. Differences were significant between most family profiles, with few exceptions (see Table 6). Parents in the balanced high family profile returned the highest prosocial and the lowest

**Table 5** Parents' Social and Emotional Loneliness Across the Family Profiles of Parental Self-Efficacy

	Social loneliness				Emotional loneliness			
	Mothers		Fathers		Mothers		Fathers	
Family profiles	<i>M</i>	SE	<i>M</i>	SE	<i>M</i>	SE	<i>M</i>	SE
Low–Low <sup>1</sup>	0.92	0.27	0.49	0.21	0.81	0.28	0.76	0.24
Low–Average <sup>2</sup>	0.44	0.11	0.01	0.09	0.28	0.10	0.05	0.09
High–Average <sup>3</sup>	–0.42	0.07	0.41	0.13	–0.24	0.09	0.30	0.13
High–High <sup>4</sup>	–0.44	0.07	–0.78	0.09	–0.52	0.08	–0.71	0.08
Differences	$\chi^2$ (1)	<i>p</i>	$\chi^2$ (1)	<i>p</i>	$\chi^2$ (1)	<i>p</i>	$\chi^2$ (1)	<i>p</i>
1 vs. 2	2.71	0.100	4.40	<b>0.036</b>	3.23	0.072	7.61	<b>0.006</b>
1 vs. 3	22.64	<b>0.000</b>	0.12	0.725	12.99	<b>0.000</b>	2.85	0.091
1 vs. 4	23.14	<b>0.000</b>	30.49	<b>0.000</b>	21.39	<b>0.000</b>	33.53	<b>0.000</b>
2 vs. 3	41.72	<b>0.000</b>	6.59	<b>0.010</b>	13.94	<b>0.000</b>	2.43	0.119
2 vs. 4	42.12	<b>0.000</b>	41.06	<b>0.000</b>	38.04	<b>0.000</b>	40.24	<b>0.000</b>
3 vs. 4	0.04	0.840	59.00	<b>0.000</b>	5.08	<b>0.024</b>	43.18	<b>0.000</b>
Overall	67.88 <sup>a</sup>	<b>0.000</b>	83.09 <sup>a</sup>	<b>0.000</b>	51.80 <sup>a</sup>	<b>0.000</b>	77.66 <sup>a</sup>	<b>0.000</b>

Statistically significant differences ( $p < 0.05$ ) are bolded; <sup>a</sup> $\chi^2 = 3$  1 = low–low, 2 = low–average, 3 = high–average, 4 = high–high family profile of parental self-efficacy

antisocial evaluations of their preadolescents' behavior, whereas parents in the low–low profile evaluated their preadolescents with the highest antisocial and the lowest prosocial behavior. Like parents, teacher evaluations of preadolescents' prosocial behavior were the highest for those in high–high, and the lowest for those in the low–low family profile. Similarly, peers evaluated those preadolescents in the low–low profile as the least prosocial and assigned the highest prosocial scores to preadolescents from the high–average and high–high family profiles of PSE. As for the discrepant family profiles (i.e., low–average and high–average), parent-, teacher-, and peer-evaluated prosocial behavior was higher for preadolescents in the high–average family profile of PSE.

Preadolescents' social ( $p < 0.01$ ) and emotional loneliness ( $p < 0.01$ ) significantly differed across the family profiles of PSE. Preadolescents in the low–low family profile reported the highest social and emotional loneliness, whereas preadolescents in the high–high and high–average profiles had the lowest social and emotional loneliness experiences. Differences between the discrepant family profiles of PSE (low–average and high–average) were not statistically significant for social loneliness, but preadolescents in the low–average profile reported significantly higher emotional loneliness compared to their peers in the high–average family profile of PSE ( $p = 0.012$ ).

## Discussion

We adopted a person-centered approach to examine what characterizes mothers', fathers', and their preadolescents' intra- and extra-familial relationships across family profiles

of different family-level configurations of mothers' and fathers' PSE. Thereby, we aimed for a more holistic understanding of the mechanisms underlying family-level intra- and extra-familial relationship well-being (i.e., low loneliness, open family communication, and high social competence) and vulnerability (i.e., high loneliness, restricted family communication, low social competence). We identified two balanced and two discrepant family profiles of PSE: (i) low–low, (ii) low–average, (iii) high–average, and (iv) high–high (mother–father). Relationship well-being accumulated in high PSE family profiles, and vulnerability in balanced low PSE family profile. We next discuss these in more detail, along with the practical implications, limitations, and future directions based on our findings.

### Parents in Balanced Low PSE Family Profile are the Loneliest and Perceive Their Family Communication as the Least Open

Our findings show that the family communication environment, as perceived by mothers and fathers, significantly differs between the family profiles of PSE. High conversation-oriented family types (i.e., pluralistic and consensual) were the most typical in the high–high family profile of PSE. Low-conversation oriented family types (i.e., laissez-faire and protective) dominated the low–low family profile, which was especially true for fathers' perceptions. It seems that parents who experience themselves as efficacious are better prepared to encourage open and frequent discussions with their preadolescents, including on sensitive topics, as is typical for parents in high conversation-oriented family types (Koerner & Fitzpatrick,

**Table 6** Preadolescents' Social Competence and Loneliness Experiences Across the Family Profiles of Parental Self-Efficacy

Family profiles	paPRO <sup>a</sup>		tePRO <sup>b</sup>		pePRO <sup>b</sup>		sePRO <sup>b</sup>		paANT <sup>a</sup>		teANT <sup>b</sup>		peANT <sup>b</sup>		seANT <sup>b</sup>		PN <sup>c</sup>		DL <sup>c</sup>	
	M	SE	M	SE	M	SE	M	SE	M	SE	M	SE	M	SE	M	SE	M	SE	M	SE
Low-Low <sup>1</sup>	-0.49	0.22	-0.48	0.21	-0.52	0.22	1.86	0.14	0.58	0.23	0.15	0.24	0.23	0.24	-0.06	0.20	0.53	0.27	0.48	0.28
Low-Average <sup>2</sup>	-0.46	0.11	-0.34	0.11	-0.21	0.10	1.67	0.06	0.18	0.11	0.17	0.12	0.04	0.10	-0.19	0.11	0.13	0.11	0.17	0.11
High-Average <sup>3</sup>	0.21	0.12	0.23	0.14	0.33	0.12	1.52	0.06	-0.15	0.13	-0.21	0.13	-0.23	0.11	0.27	0.13	-0.10	0.12	-0.24	0.11
High-High <sup>4</sup>	0.54	0.11	0.61	0.12	0.24	0.13	1.56	0.06	-0.30	0.12	0.19	0.13	0.09	0.14	0.05	0.13	-0.30	0.10	-0.20	0.11
Differences	$\chi^2(1)$	<i>p</i>	$\chi^2(1)$	<i>p</i>	$\chi^2(1)$	<i>p</i>	$\chi^2(1)$	<i>p</i>	$\chi^2(1)$	<i>p</i>	$\chi^2(1)$	<i>p</i>	$\chi^2(1)$	<i>p</i>	$\chi^2(1)$	<i>p</i>	$\chi^2(1)$	<i>p</i>	$\chi^2(1)$	<i>p</i>
1 vs. 2	0.02	0.881	0.35	0.555	1.72	0.189	1.69	0.194	2.35	0.126	0.01	0.917	0.52	0.473	0.34	0.561	1.81	0.179	1.02	0.313
1 vs. 3	7.80	<b>0.005</b>	7.60	<b>0.006</b>	12.18	<b>0.000</b>	5.13	<b>0.024</b>	7.35	<b>0.007</b>	1.65	0.199	3.14	0.076	1.84	0.175	4.41	<b>0.036</b>	5.50	<b>0.019</b>
1 vs. 4	17.64	<b>0.000</b>	19.73	<b>0.000</b>	9.40	<b>0.002</b>	3.86	<b>0.049</b>	11.11	<b>0.001</b>	1.54	0.215	0.24	0.623	0.19	0.661	8.02	<b>0.005</b>	5.05	<b>0.025</b>
2 vs. 3	16.38	<b>0.000</b>	10.13	<b>0.001</b>	12.66	<b>0.000</b>	3.33	0.068	3.60	0.058	4.50	<b>0.034</b>	3.47	0.062	7.43	<b>0.006</b>	1.94	0.164	6.31	<b>0.012</b>
2 vs. 4	40.28	<b>0.000</b>	34.4	<b>0.000</b>	8.05	<b>0.005</b>	1.59	0.207	8.30	<b>0.004</b>	4.29	<b>0.038</b>	0.08	0.782	1.95	0.163	7.97	<b>0.005</b>	5.50	<b>0.019</b>
3 vs. 4	3.91	<b>0.048</b>	4.21	<b>0.040</b>	0.28	0.594	0.26	0.611	0.76	0.384	0.01	0.936	3.27	0.071	1.40	0.237	1.60	0.205	0.04	0.839
Overall	48.13 <sup>d</sup>	<b>0.000</b>	42.26 <sup>d</sup>	<b>0.000</b>	22.12 <sup>d</sup>	<b>0.000</b>	7.23 <sup>d</sup>	0.065	15.86 <sup>d</sup>	<b>0.001</b>	6.68 <sup>d</sup>	0.083	6.01 <sup>d</sup>	0.111	7.64 <sup>d</sup>	0.054	13.02 <sup>d</sup>	<b>0.005</b>	11.72 <sup>d</sup>	<b>0.008</b>

Statistically significant differences ( $p < 0.05$ ) are bolded

All figures are based on standardized longitudinal mean scores: <sup>a</sup>fourth and sixth grade; <sup>b</sup>fourth, fifth, and sixth grade; <sup>c</sup>five time points across fourth through sixth grade; <sup>d</sup> $\chi^2 = 3$

*pa* parent evaluation, *te* teacher evaluation, *pe* peer evaluation, *se* self-evaluation, *PRO* prosocial behavior, *ANT* antisocial behavior, *PN* social loneliness, *DL* emotional loneliness 1 = low-low, 2 = low-average, 3 = high-average, 4 = high-high family profile of parental self-efficacy

2002, 2006; Ritchie & Fitzpatrick, 1990). This aligns with findings that show associations between high PSE, responsive parenting, and the provision of age-appropriate autonomy (Bandura et al., 2011; Coleman & Karraker, 1998, 2000; Shumow & Lomax, 2002).

Mothers and fathers in the balanced low PSE family profile reported the highest loneliness experiences, which aligns with previous research that has established associations between low PSE and high loneliness experiences (Junttila et al., 2007, 2015; Korja et al., 2015). Our findings further show that social and emotional loneliness experiences, similarly, accumulate in families in which parents have low PSE. We further found that parents' loneliness experiences followed their individually perceived PSE. That is, higher self-perceived PSE was associated with lower loneliness experiences, and vice versa. This was especially visible in the discrepant family profiles, in which parents' loneliness experiences followed the level of their own PSE, rather than that of the other parent. These findings suggest that well-being and vulnerability among parents, including the intertwining of loneliness and PSE, develops relatively independently in the two parents, instead of being replicated in the other (see Junttila et al., 2015).

We further identified gender differences in mothers' and fathers' evaluations across all measured variables. Mothers evaluated their PSE higher than fathers did, which is in line with previous findings (Junttila & Vauras, 2014). Moreover, fathers more typically reported low conversation-oriented family types compared to mothers (Koerner & Fitzpatrick, 2002). We found that this was especially true when combined with the low and discrepant family profiles of PSE. Indeed, the largest difference between mothers' and fathers' perceived family type was identified in the discrepant high-average profile: the vast majority of mothers reported high conversation-oriented family type, whereas more than half of fathers reported low conversation-oriented family types.

### Preadolescents in Balanced Low PSE Family Profile are the Loneliest and Evaluated with the Lowest Social Competence

Preadolescents in the low-low family profile were evaluated with the lowest prosocial behavior by their peers, teachers, and parents, which aligns with findings by Junttila and Vauras (2014). Preadolescents' self-evaluations of prosocial behavior did not, however, yield significant differences across the family profiles of PSE. As shown by Junttila et al. (2006), self-evaluated prosocial behavior typically diverges especially from teacher and parent evaluations, which could explain the lack of significant associations for self-evaluations, unlike

for other evaluations. Given that peer and teacher evaluations of prosocial behavior were significantly the lowest for preadolescents in the balanced low PSE family profile, our findings suggest that preadolescents from this family profile are less prepared to establish and maintain meaningful relationships, which is also visible for their teachers and peers. This aligns with the understanding that relationships that preadolescents share in the family context shape their extra-familial relationships, and vice versa (Bronfenbrenner & Morris, 2006; Osher et al., 2020).

Only parent-, and not self-, teacher-, or peer-evaluated antisocial behavior was associated with family profiles of PSE in a way that parents in the low–low family profile evaluated their preadolescents with the highest antisocial behavior. Parental evaluations of their children’s antisocial behavior have been shown to diverge from those of peers and teachers, and especially from self-evaluations (Junttila et al., 2006), which could explain these differences. Indeed, it can be presumed that parent evaluations, especially, intertwine with their PSE. Parents who experience their child’s behavior as challenging can struggle to experience confidence in their parenting abilities, which can undermine their PSE (Ardelt & Eccles, 2001; Jones & Prinz, 2005). On the other hand, parents with low PSE can further be more vigilant of a child’s difficult behaviors due to previous negative experiences, stress, and a lack of confidence in overcoming challenges (Coleman & Karraker, 1998).

Preadolescents in low PSE family profiles reported the highest social and emotional loneliness experiences. Previous studies that have examined the family mechanisms underlying children’s loneliness have shown that same-sex parents’ loneliness can be reflected in their preadolescents’ long-term social loneliness (Salo et al., 2020). Moreover, it has been shown that parents’ PSE can, through its impact on children’s social competence, be associated with children’s loneliness experiences (Junttila et al., 2007). Our findings contribute by showing that belonging to a low–low family profile of PSE, as such, is associated with preadolescents’ higher social and emotional loneliness. To that end, research on the mechanisms underlying children’s loneliness can benefit from holistic and synergistic approaches that acknowledge all family members’ intra- and extra-familial relationship well-being. Moreover, preadolescents in the high–average profile reported lower emotional loneliness compared to their peers in the low–average profile. This can tentatively imply that, in discrepant family profiles, one parent’s higher PSE can buffer the effects that the other parent’s lower PSE might otherwise have on preadolescent’s emotional loneliness. It could also be that one parent’s low PSE, as such, predisposes preadolescents to vulnerability for emotional loneliness.

## Practical Implications

As PSE does not present a fixed trait and is malleable to change, it presents a potentially powerful target of interventions to alleviate vulnerability and promote well-being among parents and preadolescents (Albanese et al., 2019; Junttila et al., 2007; Korja et al., 2015). While parents of younger children may more likely meet each other, either through services or in the playgrounds, parents of preadolescents, as in our study, are less likely to regularly meet other parents to discuss their experiences and to share worries and joys related to parenting. Providing low-threshold support available for parents of preadolescents without having to be labeled as at-risk families can, when meaningfully designed and implemented, help alleviate parents’ concerns and worries regarding parenting while providing social support. Indeed, as parents’ and preadolescents’ loneliness experiences accumulate in families with low PSE, interventions and efforts to target both parental self-efficacy and loneliness experiences might be especially effective.

Overall, social expectations related to parenting are high, which can be negatively reflected in PSE if one perceives struggles in meeting these high demands, especially when combined with loneliness and having no one to rely on (see Junttila et al., 2007). To that end, instead of mere lists of behaviors that “good parenting” consists of, it is important to discuss what constitutes good-enough parenting, and how parents’ resources could most effectively be promoted in diverse circumstances (Luthar, 2015). Indeed, parenting is always embedded in the wider cultural and social context (Bronfenbrenner & Morris, 2006; Osher et al., 2020). Therefore, ensuring adequate and sensitive support to meet the needs of all parents requires targeting any inequalities that families are facing while simultaneously re-evaluating how we encounter one another.

## Limitations and Future Directions

The strengths of our study include applying a person-centered approach that enabled us to capture the heterogeneity in families, as well as family-level discrepancies. Unlike most previous research on PSE, we acknowledged both mothers’ and fathers’ PSE and focused on the parents of preadolescents, which have yet remained less mapped compared to parents of younger children (Fang et al., 2021). However, our study is not without limitations. The data were gathered in Finland, and the focus was on two-parent families of preadolescents, single-parent families being excluded from our study (as the focus was specifically on family-level configurations of mothers’ and fathers’ PSE). To that end, future studies with diverse

samples are needed within different cultural contexts and in different family compositions. Moreover, the sample size did not support gender-specific SEM analyses for preadolescents, but *t*-tests found no statistically significant differences in family profiles of PSE in terms of the preadolescent's gender ( $p = 0.883$ ), which indicates only weak gender differences in this respect. When interpreting our tentative findings regarding one parent's buffering effect on the preadolescent's emotional loneliness in the discrepant family profiles, it must be remembered that any such compensating effect must be tested in more statistically powerful future studies. Finally, as our findings emphasize the need to find effective ways to promote all parents' well-being and resources, qualitative studies that allow giving a voice to parents with diverse needs are needed. These future efforts would importantly inform the multifaceted needs that parents have, what gives them strength, and on the other hand, the hurdles that they face. Moreover, as fathers were more prone to report lower conversation orientation and higher social and emotional loneliness compared to mothers, especially when combined with low PSE, any cultural, social, or other hurdles that might burden the fathers, especially, should further be explored.

## Conclusions

Families in which the mother's and father's parental self-efficacy was high were characterized by overall intra- and extra-familial relationship well-being. Relationship vulnerabilities, then again, accumulated in the low–low parental self-efficacy family profile: mothers, fathers, and preadolescents reported the highest social and emotional loneliness, family communication was less frequent and more restricted, and preadolescents' teacher-, peer-, and parent-evaluated prosocial behavior was the lowest, and parent-evaluated antisocial behavior the highest. Parenting a preadolescent amid uncertainty of many kinds is certainly not an easy task. Therefore, supporting parents in their efforts and ensuring that they have sufficient resources—such as feeling efficacious and not left alone—should be our primary goal. This is not only expected to strengthen parents' own well-being but also that of their preadolescents.

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## Compliance with ethical standards

**Conflict of interest** The authors declare no competing interests.

**Consent to participate** Informed consent was obtained from teachers, and from parents for their own and their children's participation and sharing of pseudonymized data.

**Consent to publish** Participants were informed that the data is collected for scientific purposes, including publishing articles. None of the participants are identifiable in the publications.

**Ethics approval** Ethical code was stringently followed according to the guidelines of the Ethics Committee of University of Turku. In Finland, distinct ethical approval from the Ethics Committee was not necessary to this kind of research when the data was collected.

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## References

- Albanese, A. M., Russo, G. R., & Geller, P. A. (2019). The role of parental self-efficacy in parent and child well-being: A systematic review of associated outcomes. *Child: Care, Health and Development*, 45(3), 333–363. <https://doi.org/10.1111/cch.12661>.
- Ardelt, M., & Eccles, J. S. (2001). Effects of mothers' parental efficacy beliefs and promotive parenting strategies on inner-city youth. *Journal of Family Issues*, 22(8), 944–972. <https://doi.org/10.1177/019251301022008001>.
- Bandura, A., Caprara, G. V., Barbaranelli, C., Regalia, C., & Scabini, E. (2011). Impact of family efficacy beliefs on quality of family functioning and satisfaction with family life. *Applied Psychology: An International Review*, 60(3), 421–448. <https://doi.org/10.1111/j.1464-0597.2010.00442.x>.
- Baumeister, R. F., & Leary, M. R. (1995). The need to belong: Desire for interpersonal attachments as a fundamental human motivation. *Psychological Bulletin*, 117(3), 497–529. <https://doi.org/10.1037/0033-2909.117.3.497>.
- Blakemore, S.-J., & Mills, K. L. (2014). Is adolescence a sensitive period for sociocultural processing. *Annual Review of Psychology*, 65, 187–207. <https://doi.org/10.1146/annurev-psych-010213-115202>.
- Bronfenbrenner, U., & Morris, P. (2006). The bioecological model of human development. In R. M. Lerner (Ed.), *Handbook of child psychology* (6th ed., Vol. 1, pp. 793–828). John Wiley and Sons.
- Cantor, P., Osher, D., Berg, J., Steyer, L., & Rose, T. (2019). Malleability, plasticity, and individuality: How children learn and develop

- in context. *Applied Developmental Science*, 23(4), 307–337. <https://doi.org/10.1080/10888691.2017.1398649>.
- Cohen, J. (1988). *Statistical power analysis for the behavioral sciences* (2nd ed.). Erlbaum.
- Coleman, P. K., & Karraker, K. H. (1998). Self-efficacy and parenting quality: Findings and future applications. *Developmental Review*, 18(1), 47–85. <https://doi.org/10.1006/drev.1997.0448>.
- Coleman, P. K., & Karraker, K. H. (2000). Parenting self-efficacy among mothers of school-age children: Conceptualization, measurement, and correlates. *An Interdisciplinary Journal of Applied Family Studies*, 49(1), 13–24. <https://doi.org/10.1111/j.1741-3729.2000.00013.x>.
- Curran, P. J., West, S. G. & Finch, J. F. (1996). The robustness of test statistics to nonnormality and specification error in confirmatory factor analysis. *Psychological Methods*, 1(1), 16–29. <https://doi.org/10.1037/1082-989X.1.1.16>.
- Fang, Y., Boelens, M., Windhorst, D. A., Raat, H., & van Grieken, A. (2021). Factors associated with parenting self-efficacy: A systematic review. *Journal of Advanced Nursing*, 77(6), 2641–2661. <https://doi.org/10.1111/jan.14767>.
- Geiser, C. (2013). *Methodology in the social sciences. Data analysis with Mplus*. Guilford Press.
- Häfner, I., Flunger, B., Dicke, A. -L., Gaspard, H., Brisson, B. M., Nagengast, B., & Trautwein, U. (2018). The role of family characteristics for students' academic outcomes: A person-centered approach. *Child Development*, 89(4), 1405–1422. <https://doi.org/10.1111/cdev.12809>.
- Hoza, B., Bukowski, W. M., & Beery, S. (2000). Assessing peer network and dyadic loneliness. *Journal of Clinical Child Psychology*, 29, 119–128. [https://doi.org/10.1207/S15374424jccp2901\\_12](https://doi.org/10.1207/S15374424jccp2901_12).
- Jones, T. L., & Prinz, R. J. (2005). Potential roles of parental self-efficacy in parent and child adjustment: A review. *Clinical Psychology Review*, 25(3), 341–363. <https://doi.org/10.1016/j.cpr.2004.12.004>.
- Junttila, N., & Vauras, M. (2009). Loneliness among school-aged children and their parents. *Scandinavian Journal of Psychology*, 50(3), 211–219. <https://doi.org/10.1111/j.1467-9450.2009.00715.x>.
- Junttila, N., & Vauras, M. (2014). Latent profiles of parental self-efficacy and children's multisource-evaluated social competence. *British Journal of Educational Psychology*, 84(3), 397–414. <https://doi.org/10.1111/bjep.12040>.
- Junttila, N., Vauras, M., & Laakkonen, E. (2007). The role of parenting self-efficacy in children's social and academic behavior. *European Journal of Psychology of Education*, 22(1), 41–61. <https://doi.org/10.1007/BF03173688>.
- Junttila, N., Voeten, M., Kaukiainen, A., & Vauras, M. (2006). Multisource assessment of children's social competence. *Educational and Psychological Measurement*, 66(5), 874–895. <https://doi.org/10.1177/0013164405285546>.
- Junttila, N., Aromaa, M., Rautava, P., Piha, J., & Räihä, H. (2015). Measuring multidimensional parental self-efficacy of mothers and fathers of children ages 1.5 and 3 years. *Family Relations*, 64(5), 665–680. <https://doi.org/10.1111/fare.12161>.
- Kaikkonen, R., Murto, J., Pentala, O., Koskela, T., Virtala, E., Härkänen, T. ... Koskinen, S. (2015). Alueellisen terveys- ja hyvinvointitutkimuksen perustulokset 2010–2015 [Results of regional health and welfare research 2010–2015]. Retrieved from <http://www.thl.fi/ath>.
- Koerner, A. F., & Fitzpatrick, M. A. (2002). Understanding family communication patterns and family functioning: The roles of conversation orientation and conformity orientation. *Annals of the International Communication Association*, 26(1), 36–65. <https://doi.org/10.1080/23808985.2002.11679010>.
- Koerner, A. F., & Fitzpatrick, M. A. (2006). Family communication patterns theory: A social cognitive approach. In D. O. Braithwaite & L. A. Baxter (Eds.), *Engaging theories in family communication: Multiple perspectives* (pp. 50–65). Sage Publications.
- Korja, R., Piha, J., Otava, R., Lavanchy-Scaiola, C., Ahlqvist-Björkroth, S., Junttila, N., Aromaa, M., & Räihä, H. (2015). Psychological well-being and parental self-efficacy in relation to the family's triadic interaction. *Infant Mental Health Journal*, 36(3), 298–307. <https://doi.org/10.1002/imhj.21512>.
- Luthar, S. S. (2015). Mothering mothers. *Research in Human Development*, 12(3-4), 295–303. <https://doi.org/10.1080/15427609.2015.1068045>.
- Marsh, H. W., Lüdtke, O., Trautwein, U., & Morin, A. J. S. (2009). Classical latent profile analysis of academic self-concept dimensions: Synergy of person- and variable-centered approaches to theoretical models of self-concept. *Structural Equation Modeling*, 16(2), 191–225. <https://doi.org/10.1080/10705510902751010>.
- Muthén, B. (2003). Statistical and substantive checking in growth mixture modeling: Comment on Bauer and Curran (2003). *Psychological Methods*, 8, 369–377. <https://doi.org/10.1037/1082-989X.8.3.369>.
- Muthén, L. K. and Muthén, B. O. (1998–2015). *Mplus user's guide*. Seventh edition. Los Angeles, CA: Muthén & Muthén.
- Muthén, L. K. and Muthén, B. O. (2008). *Mplus user's guide*. Los Angeles, CA: Muthén & Muthén.
- Nylund, K. L., Asparouhov, T., & Muthén, B. (2007). Deciding on the number of classes in latent class analysis and growth mixture modeling: A Monte Carlo simulation study. *Structural Equation Modeling: A Multidisciplinary Journal*, 14(4), 535–569. <https://doi.org/10.1080/10705510701575396>.
- Osher, D., Cantor, P., Berg, J., Steyer, L., & Rose, T. (2020). Drivers of human development: How relationships and context shape learning and development. *Applied Developmental Science*, 24(1), 6–36. <https://doi.org/10.1080/10888691.2017.1398650>.
- Peplau, L. A., & Perlman, D. (1982). Perspectives on loneliness. In L. A. Peplau & D. Perlman (Eds.), *Loneliness: A sourcebook of current theory, research, and therapy* (pp. 1–20). Wiley-Interscience.
- Qualter, P., & Munn, P. (2002). The separateness of social and emotional loneliness in childhood. *Journal of Child Psychology and Psychiatry*, 43(2), 233–244. <https://doi.org/10.1111/1469-7610.00016>.
- Ritchie, L. D., & Fitzpatrick, M. A. (1990). Family communication patterns: Measuring interpersonal perceptions of interpersonal relationships. *Communication Research*, 17(4), 523–544. <https://doi.org/10.1177/009365090017004007>.
- Roeser, R. W., Strobel, K. R., & Quihuis, G. (2002). Studying early adolescents' academic motivation, social-emotional functioning and engagement in learning: Variable- and person-centered approaches. *Anxiety, Stress & Coping: An International Journal*, 15(4), 345–368. <https://doi.org/10.1080/1061580021000056519>.
- Rost, J. (2006). Latent class analysis. In F. Petermann, & M. Eid (Eds.), *Handbook of Psychological Assessment* (pp. 275–287). Hogrefe.
- Russell, D., Peplau, L. A., & Cutrona, C. E. (1980). The revised UCLA Loneliness Scale: Concurrent and discriminant validity evidence. *Journal of Personality and Social Psychology*, 39(3), 472–480. <https://doi.org/10.1037/0022-3514.39.3.472>.
- Salminen, J., Pakarinen, E., Poikkeus, A.-M., Laakso, M.-L., & Lerkkanen, M.-K. (2022). Teacher-child interactions as a context for developing social competence in toddler classrooms. *Journal of Early Childhood Education Research*, 11(1), 38–67. <https://journal.fi/jecer/article/view/114006>.
- Salo, A.-E., Junttila, N., & Vauras, M. (2020). Social and emotional loneliness: Longitudinal stability, interdependence, and intergenerational transmission among boys and girls. *Family Relations*, 69(1), 151–165. <https://doi.org/10.1111/fare.12398>.
- Sameroff, A. (1975). Transactional models in early social relations. *Human Development*, 18(1–2), 65–79. <https://doi.org/10.1159/000271476>.



- Sameroff, A. (Ed.). (2009). *The transactional model of development: How children and contexts shape each other*. American Psychological Association. <https://doi.org/10.1037/11877-000>
- Shumow, L., & Lomax, R. G. (2002). Parental efficacy: Predictor of parenting behavior and adolescent outcomes. *Parenting, 2*(2), 127–150. [https://doi.org/10.1207/S15327922PAR0202\\_03](https://doi.org/10.1207/S15327922PAR0202_03).
- Solomon, S. M. (2000). Childhood loneliness: Implications and intervention considerations for family therapists. *The Family Journal: Counseling and Therapy for Couples and Families, 8*(2), 161–164. <https://doi.org/10.1177/1066480700082008>.
- Walrath, D. E., Turner, P., & Bruzek, J. (2004). Reliability test of the visual assessment of cranial traits for sex determination. *American Journal of Physical Anthropology, 125*(2), 132–137. <https://doi.org/10.1002/ajpa.10373>.
- Weiss, R. S. (1973). *Loneliness: The experience of emotional and social isolation*. MIT Press.