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Family matters: a multi-perspective approach to the link between parenting and offspring mental health problems

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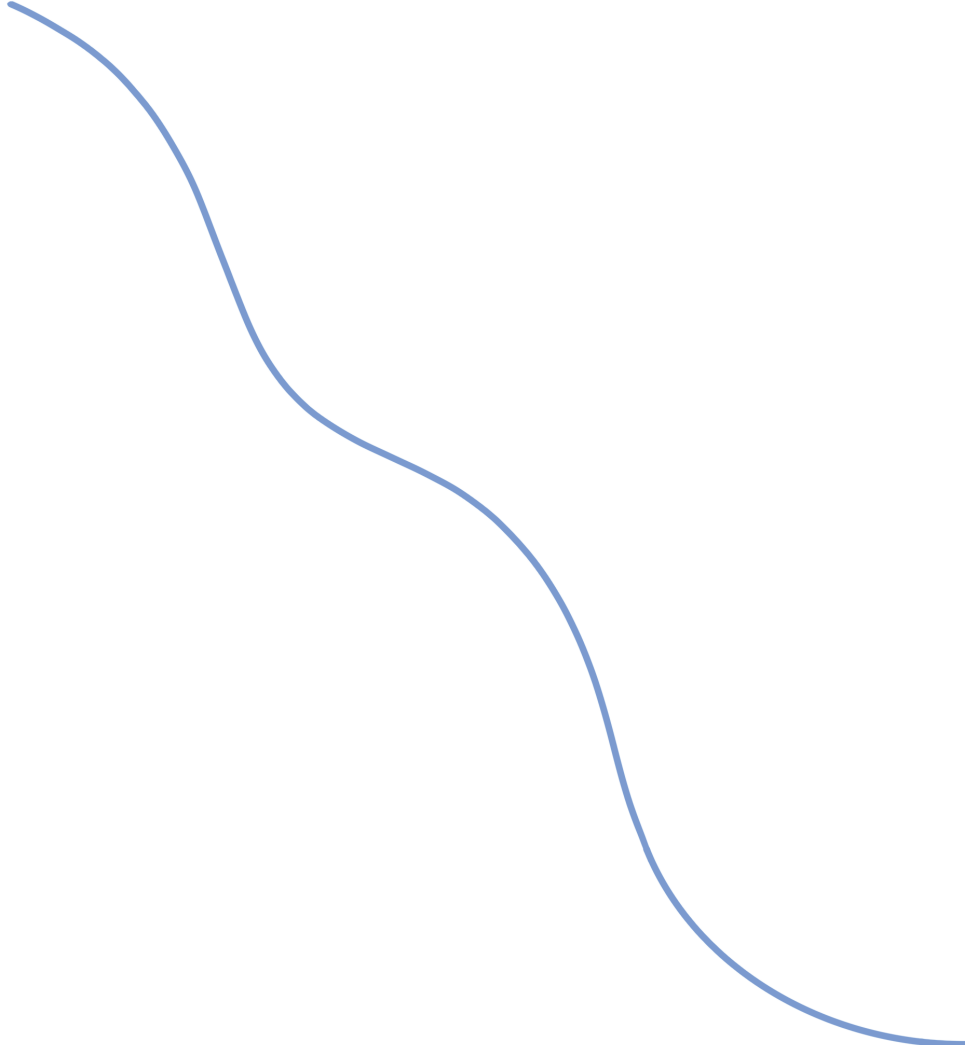
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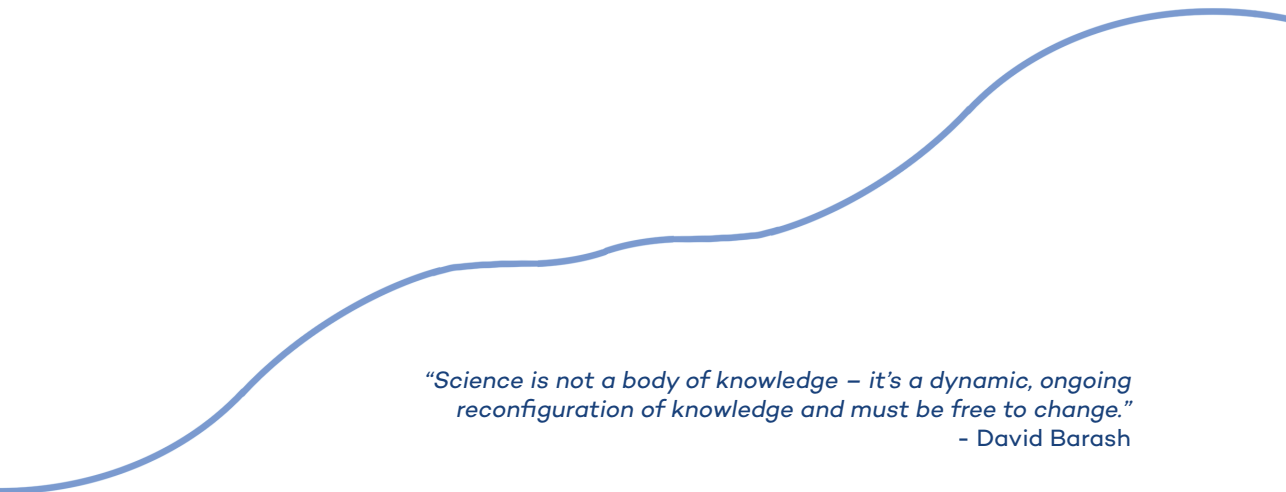
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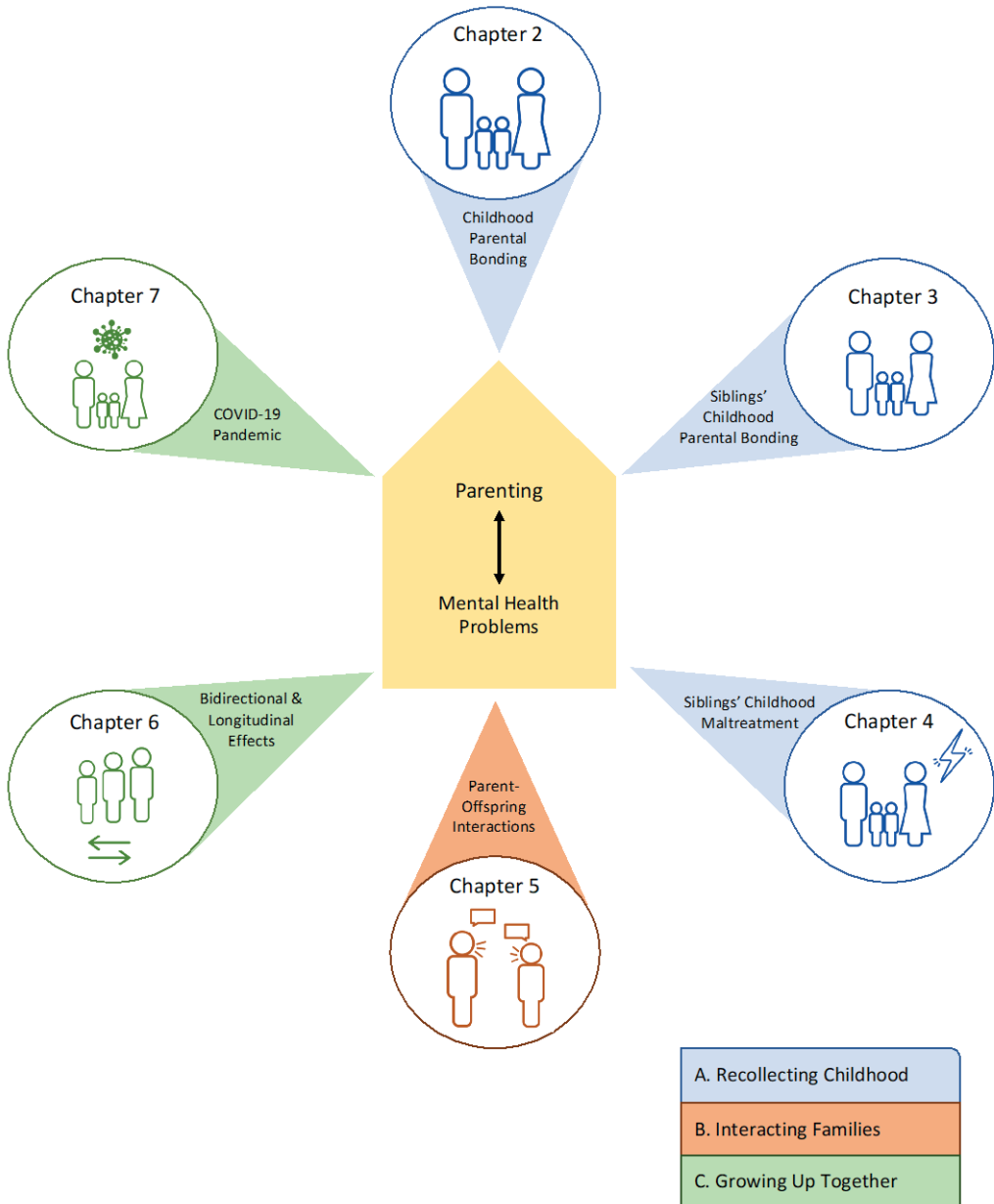
General Discussion



“Science is not a body of knowledge – it’s a dynamic, ongoing reconfiguration of knowledge and must be free to change.”
- David Barash

Traditionally, mental health professionals, both researchers and clinicians, tend to focus on the individual when addressing mental health problems in adults. For instance, treatment guidelines for most common disorders, e.g. anxiety and depression, are predominantly aimed to target the symptomatology of the individual (GGZ Standaarden, 2021a, 2021b) and do not consider childhood parenting experiences nor the current family context. Most people live with their family, however, and parents' and offspring's mental states and behaviors greatly influence each other. Families are dynamic interacting systems, like Calder's sculptures (see figure 1 of chapter 1). And as illustrated by the vignettes of Jessica and Julian (see textbox 1, chapter 1) and Mia and Lily (textbox 2, chapter 1) siblings raised by the same parents may experience the relationship with the parent differently and may themselves differ in terms of mental wellbeing. The central aim of this dissertation was to investigate mental health problems in the family context, specifically focusing on (A) recollections of parenting behavior and childhood maltreatment, (B) parent-offspring interactions and (C) adolescents' mental wellbeing and parenting experiences including bidirectional influences between parents and offspring. Figure 1 provides a graphical overview of the concepts examined in this dissertation. In this final chapter, the main findings are discussed in the light of three identified strategies (chapter 1). That is, (1) The examination of multiple family members: siblings, fathers and mothers, (2) The use of multiple measures and (3) The application of adequate (complex) analytical models. At the end, implications for clinical practice and research questions for future studies will be discussed.

Figure 1. Graphical overview of the concepts examined in this dissertation



1. The examination of multiple family members: siblings, fathers and mothers

Do siblings share experiences of parenting and maltreatment?

With respect to similarities in retrospective reports on childhood parental bonding experiences among adult siblings, we found moderate to high resemblance for parental bonding with mother and father in chapter 3. It should be noted that substantial within-family variation in the levels of recollected parental bonding was also apparent. This is in accordance with findings from adult twin samples (Kendler, 1996; Otowa et al., 2013) and is also illustrated by the vignettes of Jessica and Julian (textbox 1) and Mia and Lily (textbox 2) in chapter 1. For example, Jessica and Julian both perceived their mother as overprotective, but the bond with their mother also substantially differed between them: their mother was more on top of everything Julian did and was less concerned about Jessica. In Mia and Lily's case, they both thought of their father as hard-working and fun to be around. However, Lily always felt he was fonder of Mia and she was often stressed when being around him. Differences in recall among siblings may arise from actual differential treatment by parents (Plomin & Daniels, 1987), which may partly be in response to differences in siblings' needs and behavior (Avinun & Knafo, 2014). In addition to 'actual' differential parental treatment, siblings may also differ in their (retrospective) *perception* of parental treatment and the relation with their parents (Plomin, 2011; Tamrouti-Makkink et al., 2004; Turkheimer & Waldron, 2000): one child might perceive a parent's protective behavior as warm, interested and caring, while a sibling might perceive that same behavior as overprotecting or even suffocating.

With respect to childhood maltreatment, we found that emotional maltreatment was most consistently recalled between siblings, followed by physical abuse, whereas sexual abuse was most often experienced by only one sibling (chapter 4). This supports our hypothesis and corroborate previous studies on sibling resemblance of childhood maltreatment (Bifulco, Brown, Lillie, & Jarvis, 1997; Hamilton-Giachritsis & Browne, 2005; Hines et al., 2006; Jean-Gilles & Crittenden, 1990; Witte et al., 2018). The relatively high similarity in the recall of emotional (and physical) maltreatment (as opposed to sexual abuse) is in line with the fact that in most cases of emotional maltreatment a parent was the perpetrator, whereas in the cases of sexual abuse, the perpetrator was most often someone else (Hovens et al., 2009).

Although siblings share countless rearing experiences, the substantial within-family variation suggests that childhood experiences of parental bonding and maltreatment are unique for each child and cannot be generalized to their siblings. As such, considering multiple siblings rather than focusing on one child per family in research and clinical practice, contributes to a more comprehensive picture of the childhood family context. A family perspective potentially reveals family-wide and person-specific patterns of parental bonding and maltreatment

which can inform clinicians to target (preventive) interventions. The family perspective on childhood experiences might be also informative for clients to better understand the background of their mental health problems.

Why siblings' experience of poor parental bonding and maltreatment matter

In adults and their sibling(s) we have demonstrated that siblings' experiences during childhood were associated with increased depressive and anxiety symptoms of the individual, above-and-beyond one's own recollections of poor parental bonding (chapter 3). A similar pattern has been shown in children: In addition to the child's individual bond with mother, the family-wide bond was also linked with child adjustment (Oliver & Pike, 2018). In addition to our findings on parental bonding, family-wide levels of emotional and physical maltreatment, but not sexual abuse, were also associated with increased adult depressive symptoms (chapter 4). The levels of physical abuse varied largely among siblings from the same family. Still, the family-wide level of physical abuse was associated with increased depressive symptom levels, whereas individual physical abuse reports did not. The negative impact of the family level of physical violence could indicate a vicarious effect by witnessing that a sibling has been abused (Gerke et al., 2018). These findings support the notion that the family is a dynamic and interacting system (Bowen, 1966), like Calder's sculpture. Moreover, Aristotle postulated that a system is something besides, and not the same, as its elements. He emphasized the importance of interactions, synergy and connection among elements of the system, which can also be applied to family systems. Adverse (parenting) experiences of one sibling do not only reside in the individual, but may also have an impact on their brothers and sisters (Brown & Prinstein, 2011). This also means that this pattern cannot be uncovered by studying individuals only. In the case of Jessica and Julian, the fights Julian had with his mother also affected Jessica, as a consequence she somewhat withdrew from family contact which made her more on her own (textbox 1). Mental health care professionals should be aware of the effect of poor parental bonding and maltreatment, not only in relation to the targeted individual, but also when considering their siblings. Focusing on the improvement of the family environment could contribute to adequate prevention for all siblings.

Is it a two-way road?

Often parenting is considered as a one-way road: parents' rearing behavior towards their offspring. Multiple types of negative parent-offspring interactions are associated with increased mental health problems in offspring during both child- and adulthood (chapter 2, 3 and 6). Specifically, perceived lack of parental care and lack of parental autonomy-granting behavior were associated with the presence of lifetime anxiety and depression (chapter 2). Yet, since relations between parental behavior and offspring mental wellbeing are bidirectional, it was studied how mental

health problems of both parents and offspring impact on how parents and offspring interact with one another in chapter 5 and 6. It can be concluded that the child's externalizing problems are also associated with their behavior towards the parent (chapter 5) and the child's behavioral problems also elicited harsher disciplinary parenting behavior (chapter 6). These findings underline the dynamical interplay between parents' and offspring's behavior in families and are also illustrated by Julian and Jessica's vignette, where Julian's rebellious behavior during adolescence made his mother desperate and made her slap him now and then (textbox 1).

This two-way road could be addressed more in clinical practice by augmenting individual-focused treatment aiming to reduce symptoms, e.g. cognitive behavioral therapy, with family-focused interventions to support the interpersonal (family) relationships. Systemic interventions and parental support to improve family communication is recommended to foster offspring's wellbeing, so that the descending two-way road may take a turn uphill.

Do fathers and mothers have a unique role?

Most studies on parent-offspring relationship and mental health problems are mainly based on mothers and one of their children, and hence findings may not be generalizable to fathers, since fathers play a unique role in child rearing. Our findings indicate that fathers do indeed play a unique role. In this thesis, recollections of a poor parental bond with mother and father were both linked to elevated symptom levels of depression and anxiety (chapter 2 & 3). The association between father-offspring bond and mental health problems, in addition to the mother-offspring bond, suggests that it is not only the amount of time spent with the child but also the quality of the interactions and relationship that is of importance for psychological wellbeing of the offspring. These findings emphasize the importance of the relationship with a father and a mother figure when it comes to mental health problems. In chapter 5 both differences and similarities emerged between fathers and mothers. On average, mothers expressed more warmth towards their child than fathers and children expressed more negativity (but not less warmth) towards their mother. Offspring's internalizing problems were related to *less negativity* towards their father, whereas offspring's externalizing problems were related to *more negativity* towards their father and to receiving *less warmth* from their mother. Father's externalizing problems were linked to *more negativity* towards offspring. Even though we found distinct associations between mental health problems and expressed warmth and negativity in mother- versus father-offspring dyads, it should be noted that father and mother models were not directly statistically compared in chapter 5 due to unbalanced groups and difference in patterns of missing data. The vignettes from textbox 1 and 2 also illustrate that the relationship with mother and father differ substantially: Jessica and Julian describe their mother as caring and overprotective and their father as pragmatic and down-

to-earth. In the case of Lily and Mia, their mother did most of the caretaking as they mainly lived with her. Nevertheless, their father played an important role in their lives for example when their mother could temporarily not look after them. On the other hand, it was also postulated in prior work that even though, in general, Dutch children still spent less time with their fathers than with their mothers (Janssen et al, in prep; Portegijs & van den Brakel, 2018) father and mother roles have become more similar over the years and fathering and mothering are not conceptually distinct constructs (Fagan, Day, Lamb, & Cabrera, 2014). Altogether, above findings indicate that the child's bond with mother *and* father should be acknowledged when addressing parenting and mental wellbeing in research and clinical practice.

Who thrives and who may struggle?

All Calder's sculptures were based on the same concept, yet each sculpture has a different form, size, colors and constellation (Figure 2). Besides the analogy of the sculptures and families as dynamical and interacting systems, the diversity within and between sculptures applies also to families.



Figure 2. Variety of sculptures representing diversity within and between families

In the two families described in the vignettes (in the introduction) one sibling struggled with anxiety symptoms, while the other had not developed any mental health problems. This variation was also illustrated in Figure 1 of chapter 2, depicting six randomly selected families from the study sample. *Within* the families, siblings differed in the level of abuse they experienced: some reported severe emotional abuse, others reported mild or no abuse (families 2, 3 and 5). Likewise, although family resemblance of anxiety and depressive symptoms exist, severity of symptoms also varied among siblings from the same family (chapter 3 and as illustrated with the vignettes). This pattern of results is in line with the theoretical notion of differential susceptibility (Pluess & Belsky, 2010) and raises the question what determines ‘who thrives and who may struggle?’

Despite their shared genetics, rearing background and familial disposition, half of the siblings of participants with a history of at least two episodes of depression and/or anxiety in the Netherlands Study of Depression and Anxiety (NESDA) has not (yet) developed a depression and/or anxiety disorder (see chapter 3). Our findings indicate that a person’s sense of mastery (internal locus of control) is protective to anxiety symptoms in a context of poor maternal bonding. While having a sense of mastery has a protective role for anxiety, it was not protective for depression (chapter 3). Rather than a single factor, a recent comprehensive review highlighted the complex nature of resilience and suggests that resilient functioning after adverse childhood adversities is facilitated by numerous mechanisms (Ioannidis, Askelund, Kievit, & van Harmelen, 2020). Social support, the presence of a stable romantic relationship and having a job, have previously also been found to advance resilient functioning (Fritz, de Graaff, Caisley, van Harmelen, & Wilkinson, 2018). Still, the complex interplay among all these protective factors needs to be further elucidated, as knowledge on the mechanisms of resilience is essential to improve preventive strategies of mental health problems after childhood family adversities.

In sum, the studies in this dissertation have demonstrated that studying multiple family members simultaneously, e.g. siblings and fathers and mothers, can reveal a picture of associations between adverse childhood (parenting) experiences with father and mother and mental health problems that adds on findings when studying one individual per household (see chapter 3 and 4). Studies with a sibling design may elucidate within family differences in response to adverse childhood events and may hence be instructive to learn more about resilient functioning.

2. The use of multiple measures

Parent-offspring relationship and interactions are immensely complex and dynamic processes and therefore hard to capture with a single method/measure. In this dissertation different measures were used to assess multiple distinct, but also overlapping facets of the parent-child bond: self-reports to inform us on the

perception/recall of the bond over longer time periods that cannot be observed by others (chapter 2, 3, 4 and 6), behavioral observations to assess independent and subtle behaviors and verbal and non-verbal expressions of parents and offspring (chapter 5), ecological measurement assessments (EMA) to capture daily parent-offspring dynamics on a micro time scale (chapter 7), and lastly, in-depth interviews to gain detailed insights in a person's experiences that cannot be assessed with questionnaires or observations (chapter 1 and 8). Retrospective recall, observational measures, EMA and in-depth interviews as have been used in the current studies, inform us on distinct types and different patterns of the parent-offspring relationship. Strengths and limitations of each measure are discussed below.

Self-reports of childhood parenting and maltreatment experiences

In chapter 2, 3 and 4 the associations between adult retrospective reports of childhood parental bonding and maltreatment have been investigated and in chapter 6 child reports of harsh parental discipline have been examined. Besides the relatively easy and low-impact application as compared to observations, interviews and EMA, retrospective and concurrent self-reports have some other important advantages. Child-rated, subjective experiences of the parent-child relationship can be viewed as a reflection of the (mis)match between the experienced parental behavior and the child's (emotional) needs (Lerner et al., 1986), which might also explain the strong association with mental health problems. Moreover, integrating and comparing multiple self-reported perspectives from siblings growing up together in relation with mental health outcomes can yield a more fine-grained image of what happened during childhood in the context of the family to better adapt and adjust (family-focused) interventions.

Even though it is well-established that one's perception of the adverse (parenting) experience, rather than the actual event does matter most when addressing mental health problems (Danese & Widom, 2020; Newbury et al., 2018; Reuben et al., 2016), retrospective self-reports are fallible for several reasons. First, psychopathology-associated (mood-congruent) memory biases might contribute to stronger associations between these variables as a person's emotional state might color their view on the family interactions (negativity bias; Dalgleish & Werner-Seidler, 2014; Platt, Waters, Schulte-Koerne, Engelmann, & Salemink, 2017). It should be noted that, when removing cases with current depression or anxiety diagnoses from the analyses, a similar pattern of results was found between parental bonding and lifetime anxiety and depression (chapter 2). Secondly, subjective reports (not only on parenting and childhood maltreatment questionnaires, but in general) are limited to certain aspects and behaviors. For instance, the parental bonding instrument has been frequently used to assess childhood parenting experiences and captures various important aspects of the parent-offspring relationship, yet it does not reflect the dynamical and transactional processes of parenting, e.g. parental

flexibility or responsiveness (Kluczniok et al., 2016; van Dijk et al., 2017). Moreover, (parenting) experiences might be difficult to quantify with the answering categories, “never”, “rarely”, “sometimes”, “often” and “always”. In sum, parenting is a dynamical process consisting of multiple interactions between parents and offspring that cannot solely be studied with (retrospective) questionnaires.

Observations of the parent-offspring interactions

Observational measures are well-suited to capture parent-offspring dynamics. Observational techniques allow us to assess subtle affective and behavioral aspects of the parent-offspring dynamics and have been often used as a valid manner to examine parents' and offspring's micro (e.g. frowning or sighing) and macro (e.g. banging one's fist on the table and yelling) verbal and non-verbal expressions towards each other (Feinberg, Neiderhiser, Howe, & Hetherington, 2001; Smith, 2011). Observations, as opposed to (self) reported parenting, are not influenced by mental health problems of the parent or child. Next to these advantages, some limitations should be noted. In our observational study (chapter 5), expressed negativity was highly skewed to the left, which means that parents did not display much negativity towards their children and vice versa. The skewness could be due to the observational setting, in which participants might behave in a more socially desirable way. Although observations of parent-offspring interactions reflect natural behavior relatively well (Gardner, 2000), we acknowledge that the lab setting and video cameras could influence parents' and offspring's behavior. Family communication might be different in a natural setting, such as in the home environment when family members are not being observed. Also, the observational measurement contains a single task/conversation and is only a snap shot of the long-lasting dynamic parent-offspring interplay. These aspects might violate the ecological validity of the observational measures. To assess parenting behavior in the natural day-to-day setting EMA can be used (Keijsers, Boele, & Bülow, 2022).

Parenting in daily life (during the COVID-19 pandemic)

Mood and parenting are both considered to be dynamical processes that can fluctuate from time to time on a daily level, in response to other individuals and external circumstances (e.g., Kuppens, Oravecz, & Tuerlinckx, 2010). Therefore, it was especially relevant during the pandemic to measure mood and parenting on a daily level in the naturalistic context with EMA, rather than by observations in the lab or by a single questionnaire (Keijsers, Boele, & Bülow, 2022). Importantly, the intensive time series data allows us to indicate the presence of heterogeneity in our data. The heterogeneity suggests that whether or not parents and adolescents experience (emotional) problems can vary from family to family, which could not have been assessed using measurements on a single timepoint (chapter 6 and 7). Even though it was beyond the scope of this paper, EMA also enables the

visualization and examination of intraindividual variation across time, e.g. in mood and parenting, by testing whether these fluctuations (standard deviations) differ across measuring period or across (psychopathology) groups. It has been suggested that destabilization of daily parent-offspring interactions can contribute to or can transform into suboptimal long-term relationship (Branje, 2018). Insights into intraindividual variation of parenting and child's mood from future EMA-studies may be used to optimize and individualize supportive interventions aimed at adequate, adaptive and sensitive parenting (Molenaar & Campbell, 2009).

Qualitative in-depth interviews

As was illustrated with the vignettes of Jessica and Julian (textbox 1) and Mia and Lily (textbox 2) in chapter 1, in-dept qualitative interviews are a fruitful addition to quantitative analyses. The vignettes illustrate the differences in perception on childhood parenting and their differential pathways in terms of mental wellbeing, and may give a deeper understanding of person's view points on the causes/origin of their (different) childhood experiences and mental health problems, e.g. by answers on 'why' – questions. Here, for instance, from Mia and Lily's vignette we gain fine-grained insights into intergenerational patterns and resilience factors, e.g. their mother's emotional involvement and encouragement, despite her own anxieties. As illustrated in the current chapter, in-depth interviews can complement and refine quantitative data. Qualitative methods make it possible to ask follow-up questions to specify and to get more detailed information to explain complex issues and it allows to delve into the context of certain events, relationships, thoughts and behavior. These insights might generate follow up research questions, can inform future research and are suited for policy development (Braun & Clarke, 2006). It should be noted that there is an effect of the interviewer on the conversation and on the interpretation of qualitative data. Moreover, information from qualitative methods is not representative for the whole population and results can be difficult to replicate. However, with thematic analyses and derived key themes it is possible to replicate qualitative studies in other individuals (Braun & Clarke, 2006). Mixing quantitative and qualitative methods could provide meaningful and important knowledge about mental wellbeing in families on top of single method research.

Altogether, this dissertation illustrates that all measures capture distinct facets of the parent-offspring relationship and no single method can capture the entire complexity and dynamics of the parent-offspring relationship. The choice of measurement should be driven by the research question and theoretical assumptions underlying each method. Outcomes of the questionnaires, observations, EMA and interviews do not have to converge. Thus, even though combining methods might be challenging, a multi-step mixing-method approach in clinic and research is recommended.

3. The application of adequate (complex) analytical methods

Like Calder's sculptures, families are dynamical and interacting systems in which various processes at multiple levels take place, i.e. family-, dyadic and individual level. To combine the perspectives of participating family members and analyze data on the different levels requires complex analytical approaches. Research on families also comes with challenges such as dependence in data from family members and unbalanced designs due to unequal family sizes. Even though we strived to model family data as best as possible, the methodology that was used in the current studies also had its shortcomings. Considerations on the statistical methods are discussed below.

Family-wide and individual-specific effects

Multilevel models, i.e. random intercept models, allow to estimate family-wide (common across all siblings/family members) and individual-specific effects of childhood maltreatment and parental bonding, (Bates et al., 2015). With lme4-package, individual variables were decomposed into a family mean variable and individual relative scores (chapter 3 and 4). A similar procedure has been used in previous studies to elucidate whether siblings' experiences above-and-beyond the individual difference as compared to one's siblings have an impact on individual functioning/wellbeing (Feaster, Brincks, Robbins, & Szapocznik, 2011; Jenkins et al., 2016). A disadvantage of averaging and collapsing individuals with different parenting experiences into one undifferentiated value is that it assumes that measurement error is absent, which is an unrealistic assumption in psychology (Griliches & Hausman, 1986). Secondly, the family mean score is based on the assumptions that individual parenting scores are good indicators of the family climate (Cox & Paley, 2003). However, the latter may not always be the case: how one child is treated might substantially differ from their sibling(s), as is illustrated by Mia and Lily's case (textbox 2). Therefore 'family climate' does not perfectly represent the family-wide value as was measured here and we opt to use the term 'sibling- or family-mean or family-wide' levels. Finally, the mean does not inform us on the dispersion of parenting/maltreatment in the family and does not provide the complete image. Hence, it is relevant to examine individual differences (from the mean), i.e. relative scores as was done in chapter 3 and 4. To the best of our knowledge, there are no other methods available yet to take into account the multiple perspectives to study family-wide and individual-specific effects.

Modeling multiple (bidirectional) relationships

To combine multiple within-family relationships, e.g. the relationships between a father and his son and his daughter, and take into account bidirectional effects of these relationships as has been done in chapter 5, multilevel structural equation model (MSEM) is recommended(?). It allows to investigate the associations

between the levels of parent and offspring mental health problems and expressed warmth and negativity simultaneously in a sample of families with varying sizes. Yet, a limitation of MSEM is that often convergence issues arise due to a lack of statistical power as a result of missing data, as was also a problem in the analyses for chapter 5. Even though, we aimed to combine multiple imputations to account for missing data, it was not yet possible to integrate multiple imputations in MSEM within the 'Lavaan' R-package (Rosseel, 2012). A trade-off had to be made between retaining as much data, and thereby power, as possible or appropriately accounting for multiple levels in the data. We have applied regular SEM with adjusted standard errors to control for family relatedness in the data (chapter 5). Recently, a modeling approach to integrate multiple imputation in multilevel models and a corresponding R-package ('mdmb') have been published which might be a solution for future multilevel (family) studies (Grund, Lüdtke, & Robitzsch, 2021).

In studies on family dyads consisting of two members (e.g. parent and offspring, father and mother, sibling pair) other methods such as siblings' difference scores (see for instance Feinberg, McHale, Crouter, & Cumsille, 2003; Tamrouti-Makkink et al., 2004) and response-surface analysis can be used to integrate individual perspectives and discrepancies between perspectives (see for instance, Janssen, Verkuil, van Houtum, Wever, & Elzinga, 2021). For studies including more than two family members the family-version of the Social Relations Model (Cook, 1984) might be an appropriate method (fSRM; Stas, Schönbrodt, & Loeys, 2015). The fSRM-package allows to examine bidirectional relations in families while accounting for the fact that family relations are mutually interdependent. This model enables the researcher to answer questions on bidirectional relationships within the family, i.e. actor and partner effects, and for instance comparing groups, e.g. 'do individuals from affected families show larger variation in the amount of warmth they experience with their family members compared to individuals in unaffected families?' Due to unequal family sizes and continuous predictor variables it was not a suitable technique to answer our specific questions from chapter 5.

The importance of careful statistical model selection

To elucidate the reciprocal relationships and directional influences between negative parenting and child problems over time, we have applied the monozygotic twin difference version of the cross-lagged panel model (MZD-CLPM) and the random intercept CLPM (RI-CLPM) with the intention to strengthen our confidence in a possible causal relation (chapter 6). Although a similar pattern of results from the models was found, results also illustrate divergence in the MZD-CLPM and RI-CLPM outcomes. Substantial differences in findings from these models underline the importance of a well-defined research question, careful model selection and caution and precision when drawing causal conclusions on within-person processes.

To conclude, advanced statistical knowledge and skills and interdisciplinary collaborations are needed to deal with the complexity of family processes, family-structured data and the corresponding analytical models. Researchers need to compromise between the 'ideal' and the practically feasible statistical models (Preacher, Zhang, & Zyphur, 2016).

Implications and recommendations

Future research: Implications and interesting avenues

To contribute to a deeper understanding of the onset and maintenance of mental health problems in families and the prevention of psychopathology due to within-family adversities such as child maltreatment, we discuss several topics for future studies on mental health problems and (negative) parenting.

1. Including family members: the family perspective

Including multiple family members in research contributes to a more fine-grained and complete picture of the etiology and impact of childhood family matters and mental health problems. A systemic perspective in future studies may contribute to a better understanding of within-family processes and differences with regard to parenting and mental wellbeing. First, an examination of the potential buffering effect of optimal and sensitive parenting after childhood maltreatment within a sibling design might elucidate processes related to resilience. Second, investigating fathers and mothers shed new light on difference between mother- and father-offspring relationship (chapter 2 and 5). These findings also raise questions for future research: 'how do fathers and mothers contribute (uniquely) to child development?' and 'can warm and sensitive care-taking of one parent compensate for/buffer the effects negative parenting (e.g. neglect or abuse) of the other parent?' Another research question that arises and can solely be answered from a systemic perspective is whether family network strengths, i.e. relationship quality and strength among multiple family members, is predictive of one's functioning after childhood trauma. Studies on mother-offspring and father-offspring dyads also allow to compare interactions between parents and offspring across same-sex parent-offspring dyads and mixed-sex parent-offspring dyads. The focus on traditional families, including mothers, fathers and full biological (twin) siblings, in this dissertation limits the generalizability of the findings. It has for example been shown that families with other structures and constellations than traditional father-mother families generally reported more depressive symptoms (Barrett & Turner, 2005). As such, it is important to consider specific family structures as a potential risk or resilience factor in future studies.

2. Considering heterogeneity

Relations that were found on average in a sample may not apply to each family (Molenaar & Campbell, 2009). As shown in chapter 7, the substantial heterogeneity in the data suggests that whether or not parents and adolescents experience (emotional) problems during the COVID-19 pandemic, varies from household to household. As can be seen in Figure 3, some parents reported an increase of negative affect, whereas others reported a decrease or the same level before compared to during the COVID-19 pandemic. However, like most research in the field, many studies in the current dissertation (chapter 2, 3, 4 and 5) mainly provided information on the average effects in the studied populations. To explain within-family differences in depression and anxiety symptom levels, interaction effects were tested In chapter 3: It was found that in the context of poor maternal bonding, extraverted persons reported fewer depressive symptoms than siblings with lower levels of extraversion. Although the cross-level interaction analysis has contributed to the specificity of our findings, the results might still not apply to every individual. This limits the clinical implication of the findings in daily practice. To identify persons at risk and to elucidate who (and why a person) is resilient after adverse childhood family circumstances and to optimize treatment for each individual, consideration of heterogeneity (e.g. between and within family variation) in future studies is indispensable. Studies on longitudinal or time series data and applying random intercept and random slopes models allow us to take into account the heterogeneity in the data and to learn from individual differences in future research. It should be noted, however, that increased complexity of the analytical model, estimating separate slopes for all individuals, might impede the application of the results in practice. As such, balancing complexity of the model and applicability of the findings is an essential challenge for psychology researchers.

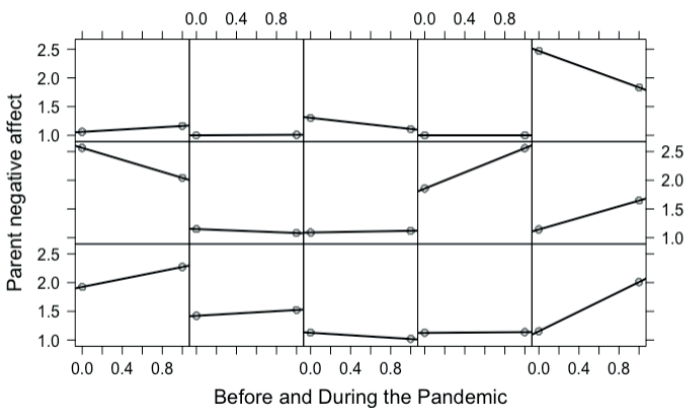


Figure 3. Depiction of change in negative affect between before and during the COVID-pandemic in 15 random parents from the sample.

3. Gaining in-depth insights with intensified (N=1) and qualitative studies

Related to our previous consideration, studies on time-series data with an intensive longitudinal design as well as qualitative studies could provide us with detailed and practical knowledge on the individual (family), on top of the information on a group level. Internal processes such as emotions, feelings, thoughts, predominantly occur within ourselves. Even (the sense of) connection with others cannot always be observed from the outside. As such studies based on observations may miss important internal processes and experiences. Even though we are able to capture these internal processes with (retrospective) self-reports (at least to a certain extent), the complex dynamic interplay between family members and the intrinsic non-stationarity of mental wellbeing are hard to capture with traditional quantitative approaches. In addition, these methods estimate predominantly average effects in the sample, which may not apply to the individual (van Os, Guloksuz, Vijn, Hafkenscheid, & Delespaul, 2019). Intensified and qualitative approaches enable us to compensate for limitations of cross-sectional designs and quantitative studies on observations and self-report data in several ways. N=1 (or single subject) designs consider the individual or family as the core unit of observation (Lillie et al., 2011). N=1 studies with an intensive longitudinal design are useful to examine within-family and within-person processes and change over time. N=1 studies can be easier to conduct in clinical practice, cheaper and less time-consuming than studies on larger samples. It is also an interesting avenue within the scientist-practitioner model (Shapiro, 2002), as N=1 studies can make research relevant for practice and practice also relevant for research (Kravitz et al., 2014). Findings from N=1 designs can guide the clinician in treatment decision and inform on the process during treatment. At the same time these findings can also contribute to answer empirical questions, and can be used as hypothesis generating process or as proof of concept.

In-depth interviews with multiple family members may also give insights in each other's' perspectives. Qualitative studies have been shown useful for illustrating, and identifying client needs and generating follow-up questions (Nooteboom et al., 2020). Also, the clinician/interviewer could take a helicopter view and provide some reflections and ask follow-up questions regarding the (differential) mental development. As illustrated in the vignette of Mia and Lily (textbox 2), in interaction with one another new insights may arise: Sharing perspectives on (childhood) events or parenting among family members could contribute to a deeper understanding of parent-offspring interactions and the association with mental health problems. Another interesting avenue for qualitative research in the future is to elucidate the needs and wishes in parenting support of parents with mental health problems such as depressive and anxiety disorders. These insights may contribute to development (or improve existing interventions) and implementation of interventions aimed to foster adaptive and sensitive

parenting and to provide parents practical help to maintain a warm and healthy parent-offspring relationship. Subsequently these interventions could prevent mental health problems in the next generation.

Clinical implications and recommendations

With respect to the clinical field, four implications are specified based on the findings from our studies.

1. *In adult mental health care, we should pay more attention to the (childhood) family context*

In child mental health care systemic interventions are common practice (Carr, 2009). In adult mental health care however, most treatments of common mental health problems, e.g. anxiety and depression, are individually focused, e.g. cognitive behavioral therapy (Cuijpers et al., 2014; Cuijpers, Smit, Bohlmeijer, Hollon, & Andersson, 2010; GGZ Standaarden, 2021a, 2021b). In this dissertation, it was demonstrated that childhood maltreatment and poor parental bonding, both individual and siblings' experiences, are associated with increased anxiety and depression levels (chapter 2, 3 and 4). Our findings suggest that the family context – parents and siblings – is relevant for *adults'* mental well-being. Besides, individuals with mental health disorders experience problems in family interactions. This was demonstrated in chapter 5: externalizing problems of fathers and offspring were related to increased negativity towards each other. It has been demonstrated in prior work as well: mothers with a depression were less emotionally available for their child (Kluczniok et al., 2016).

Based on the findings described in this dissertation, we opt to shift from a focus on the individual in treatment to a systemic perspective to improve care for adult mental health problems. To do so, we recommend to involve one or more family members in the diagnostic phase to integrate multiple perspectives in order to better understand the impact on the family system and to address (psychopathology-related) problems experienced by family members. Also, during treatment, involvement of relatives can be beneficial (Price et al., 2018). Clients should be encouraged to invite their parent, child or partner to a therapy session. Addressing and strengthening the family system might also contribute to completing treatment and translate insights and skills from the therapy setting to daily life. Taken together, shifting from a primarily individualistic focus to a systemic approach in diagnosing and treating common mental health problems, also in adults, might contribute to improvements of treatment and might also lead to prevention of problems in the next generation.

2. *A focus on (differential) subjective experience*

Our findings highlight the importance of subjective experiences of childhood parenting or maltreatment (chapter 2, 3 and 4). Although siblings shared the family context with each other as children, one's recollections of childhood parenting or maltreatment might differ from their siblings' experiences (chapter 3 and 4), as was also illustrated by the vignette of Julian and Jessica and the vignette of Mia and Lily. To translate these findings to clinical practice, two practical applications have been defined. First, clinicians could facilitate conversations between the client and their parent(s) and/or sibling(s) in order to gain insights into their differing and overlapping perspectives. In-depth interviews with parents of a mental health care-seeking children in prior research, revealed that discussing the various perspectives within the family and with other families led to new insights into needs and strengths, which in turn resulted in a feeling of empowerment and positively influenced the care process (Nooteboom et al., 2020). EMA assessments could also help to increase a client's awareness and insights into behavior and mood patterns, such as mood fluctuations and conflicts with a family member, in daily life (Bos, Snippe, Bruggeman, Wichers, & van der Krieke, 2019). These insights could be a rich source of information for the parent-child conversation. For instance, parents could explain the origin of their behaviour (e.g. (over)protectiveness) and discuss the impact on the child ("I don't want you to walk home alone because it makes me worry about your safety. I felt it annoyed you [child], could you tell me why this was affecting you?") or of their frustration ("I have been angry with you because I haven't slept well recently. How was my irritation affecting you?"). Parents and adolescents discussing their (varying) perspectives on (parenting) experiences and encouraging perspective-taking and mentalizing might lead to a deeper understanding of each other's experience. Accordingly, it could enable families to search solutions for future unpleasant encounters and increase empathy and support (Farrant, Devine, Maybery, & Fletcher, 2012). It should be noted that the child's ability of perspective-taking and mentalizing depends on the child's developmental phase (Fonagy et al., 2018). As such, these parenting strategies might be especially relevant for parents of adolescent children.

Secondly, adapting memories and appraisals of adverse childhood experiences can alleviate one's mental health problems (Danese & Widom, 2020). It was demonstrated that childhood maltreatment is associated with lack of response to treatment for depression (Nanni et al., 2012). Thus, a valuable addition to symptom-focused treatments for anxiety and depression after childhood maltreatment, is to address recollections of adverse childhood experiences (with parents) in therapy. A study to investigate the treatment effects of therapies aimed at processing childhood trauma in adults with depression is ongoing, but no results are available yet (<https://jeugdtrauma-depressie.nl/reset-studies/>). Furthermore, it was found that parental history of childhood abuse was associated with increased negativity during parent-offspring interactions, which association might be

mediated by parental mental health problems (Buisman et al., 2021; chapter 5). As such, addressing childhood trauma might result in alleviation of depressive and/or anxiety symptoms and, concurrently, improve the family climate.

3. *The need for parental support and family interventions*

Evidence-based interventions to strengthen parents' and adolescents' communication skills might be profitable to improve the overall family climate. The association between offspring's externalizing problems and receiving *less warmth* from their mother (chapter 5) and the association between offspring's behavioral problems and increased harsh parental discipline during adolescence (chapter 6) underline the importance to support parents of children with externalizing/behavioral problems with interventions fostering warm and responsive parenting. Similarly, father's externalizing problems were linked to *more negativity* towards offspring. As such, we encourage clinicians to offer parenting support when treating fathers with externalizing psychopathology to help them express themselves in less negative ways and facilitate warmer and more supportive expressions towards their child. Associations between parent and offspring internalizing/emotional problems and parenting, when modeled simultaneously with externalizing problems, were less evident from our studies in chapter 5 and 6. However, our post-hoc analyses (appendix 2, chapter 6) did show a significant link between harsh parenting and child's increased internalizing/emotional problems when modeled without child's behavioral problems (see also Pinquart, 2017). Also, the negative impact of parents' internalizing symptomatology on parenting behaviors has been frequently described in prior research (e.g., Lovejoy, Graczyk, O'Hare, & Neuman, 2000; Wilson & Durbin, 2010). Hence, in families of parents or offspring with internalizing/emotional problems might also benefit from parenting support fostering adequate and sensitive parenting.

An essential aspect of parenting is setting the right example: because of who you are and what you do, you may pass on your behavior and ideas about the world and the self to the next generation (Mesman, 2021). As such therapy may be the best prevention for intergenerational transmission of mental health problems, even young adults with (subclinical) mental health problems who do not have children yet. Decades of research on the factors mediating the association between childhood adversities and mental health problems in adulthood have shed light on the potential underlying mechanisms (Kuzminskaite et al., 2021). Increased negative self-associations and self-criticism (Campos, Besser, & Blatt, 2013; Irons, Gilbert, Baldwin, Baccus, & Palmer, 2006; van Harmelen et al., 2010), behavioral avoidance and rumination (O'Mahen, Karl, Moberly, & Fedock, 2015), emotion dysregulation and negative internalized beliefs (Coates & Messman-Moore, 2014) are identified as mediating factors in the link between experienced adversities during childhood, including maltreatment and suboptimal parental bonding and adult mental health

problems. Psycho-education is an essential aspect of adequate treatment. Scientific knowledge can be brought to practice by explaining parents that their own behavior and beliefs (e.g. negative self-beliefs and self-criticism) may be a (understandable but maladaptive) response to childhood adversities (e.g. emotional abuse), which in turn may also affect their children. Accordingly, clinicians could provide support, tools and counseling to improve these negative self-beliefs in order to enhance their (social) functioning and wellbeing.

Final Conclusion

This dissertation has described findings on mental health problems in the family context, specifically focusing on the links with parent-offspring relationship, parenting behavior and childhood maltreatment (see also Figure 1). Results support the notion that the impact of negative parent-offspring interactions and maltreatment during childhood is long-lasting and omni-various: it not only affects one child but may also increase mental health problems in siblings. Additionally, mental health problems of parents and offspring, specifically externalizing behaviors, have an impact on how parents and offspring interact. Hence, applying a systemic approach and offering parental support is recommended in treatment of mental health problems in adolescence and adulthood. To better understand mental health problems and improve prevention and treatment in the future, we should look beyond the individual. That is, the importance of the family context, interactions with and perspectives from siblings, mothers *and* fathers should be acknowledged in research and clinical practice: Family matters.

While our research on an epidemiological level yields relevant insight into global patterns and processes with regard to parenting and mental health problems, this may not apply to all families and individuals. Translated to clinical practice this means that clinical treatment guidelines might suit many but not all clients. As such, individual-specific and sensitive tailoring of (systemic) therapy to the client is essential. Integration of findings from multiple measures and advanced statistical analytical methods, as has been pursued in this dissertation, is an informative effort to unravel some of the complexity of human (interacting) behavior and the human mind. In spite of that, modesty is at place, as there will always be parts of human psychology that cannot be captured in general laws or theories despite the vantages of scientific research:

“Scientific knowledge, experiential knowledge and relational knowledge have to come together and not-knowing needs to be accepted. [...] Knowledge arises due to interaction and conversation with one other. Not understanding is a fundamental part of human functioning rather than a problem.”

– Freely adapted from Floortje Scheepers (translated)

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