

ATTACHMENT AND ITS IMPACT OVER THREE GENERATIONS

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SUMMARY

Background: Attachment parameters affect the development of self-concept and relationship patterns. However, studies on the impact of attachment parameters on symptoms of the offspring in childhood are still lacking. We therefore investigated the influence of attachment parameters of the grandparents on those of the parents treated in a psychiatric hospital, and finally on the symptoms of their (grand)children. Furthermore, the impact of attachment factors on parenting style and on resilience of parents and children has been examined.

Subjects and methods: A sample of $n=50$ mother-child-dyads in an inpatient setting was examined using the questionnaires FEB (Questionnaire on the Parental Attachment; adult and child perspective), RQ2 (Relationship Questionnaire), EFB-K (Educational Questionnaire, short form), RS13 (Resilience Scale; adult and child perspective), and CBCL (Child Behavior Checklist). Regression analyses and correlation analyses were carried out.

Results: On grandparents' level, attachment patterns predicted parents' attachment patterns ($p=0.012$): Grandfather's care [control] behavior correlated with more [less] mother's care for their own children (0.002 [0.005]). Control behavior of the grandfather was negatively correlated with the resilience of their daughters ($p=0.033$). On parents' level, a secure attachment style predicted a less overreacting parenting style ($p=0.004$), whereas an anxious-avoiding ($p=0.035$) or clinging attachment style ($p=0.044$) predicted an increased overreacting parenting style. On child's level, mental (esp. attentional ($p=0.013$) and externalizing ($p=0.032$)) symptoms correlated negatively with the level of care reported by the mother.

Conclusion: Functional attachment behavior at the grandparents' level correlated significantly with functional attachment behavior at the parental level, which in turn correlated with reduced mental symptoms at the child's level. The parenting style seems to play a mediator role for the development of attachment between mother and child, with resilience mediating between attachment and the onset of mental disorders. The results point to the crucial role of attachment parameters for mental development with corresponding implications for psychotherapy.

Key words: attachment – childhood - parenting style – resilience - mental symptoms - psychotherapy

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INTRODUCTION

Attachment parameters affect the development of self-concept and personality parameters as well as relationship patterns and therefore also the mental health of the offsprings (Bowlby 1969, Ainsworth & Bowlby 1991). Nevertheless, there is comparatively little empirical research on the influence of attachment patterns on the following two generations and symptom levels in childhood. A common assumption is that attachment patterns are transmitted intergenerationally. A central role should play internalized working models which are cognitive schemas of self and others, in relationships based on real-life experiences between children and caregivers. Hereby, the parental (especially maternal) sensitivity and responsiveness are of particular relevance (see Sette et al. 2015, Jones et al. 2015). In the sensitive and responsive parent-child relationship, the child experiences the development of a representation of a successful relationship constellation from which the child experiences the child and the parent side (Main, Kaplan & Cassidy, 1985, Johnson et al. 2010). Hereby parental emotions mediate and moderate links between attachment style and parenting behavior (Jones et al.

2015). These experiences result in thoughts, feelings, behavior and relationship skills, which the subject later passes on to his own children (Jones et al. 2015).

Influencing factors on the intergenerational transmission of attachment patterns are still largely unknown. It is still unclear which role parenting style as well as resilience play in relation to the attachment style and the parental child interrelationship over the generations. Self-reports from parents as well as from attachment research itself showed how adult attachment affects various aspects of parenting. In particular, a parental insecurity is related to less sensitive, supportive, and responsive parenting behavior (Jones et al. 2015).

Resilience is defined as the capacity of a system to adapt successfully to challenges that threaten the function, survival, or future development of the system. It is assumed that resilience is generated through myriad interactions of multiple systems from the biological to the sociocultural (Masten & Barnes 2018). Thus, while parenting factors are certainly of great individual psychological importance, an interplay takes place in resilience between challenging environmental factors and genetic vulnerability as well as epigenetic processes (Weaver et al. 2014).

Another strong influence on attachment parameters might have biological factors; e.g., a biological predisposition to increased anxiety can lead to hyperactivation of the attachment system with the strong desire for closeness in relationships (Shaver & Mikulincer 2002, Antonucci et al. 2018).

It seems evident that attachment parameters, in the case of dysfunctional psychological dynamics, are followed by mental symptoms in the offspring. It is assumed that secure parent-child relationships are implicated in children's self-regulation. While a study found no connection between secure attachment and sleep, at least a connection between poor sleep and consecutive internalizing problems could be found (Troxel et al. 2013). Nonetheless, it is astonishing how little research there is on the relationship of attachment and symptoms in the offspring. As well, most studies included the style of attachment in adulthood, but not attachment patterns in childhood, so that there are still less studies on relationships of these attachment parameters in childhood.

This issue is of particular importance for children of parents with mental disabilities. These children have a four times higher risk of developing a mental illness themselves (Mattejat & Remschmidt 2008, Gunlicks 2008). In Germany there are approximately 3-4 million (about 4% of all residents) children of parents with mental disabilities (Bühning 2010). And worldwide, 10-20% of children suffer from a mental disorder (2020, www.who.int). In view of increasing global problems (e.g. climate crisis, COVID-19 etc.), an increase in mental illnesses has to be expected. It is therefore urgently necessary to check what influence attachment parameters have on attachment styles, parenting styles, resilience and even symptoms of later generations. And this attachment research should not only refer to studies with infants. Also, children up to the toddler age and children in even later stages of development even toddlers need a particularly secure attachment. However, attachment research is also rather sparse for these age ranges.

One reason for this research lack in these various respects could be the reduced availability of empirically evaluated tests that retrospectively assess childhood attachment dimensions. Some tests are only on a semistructured level that have disadvantages in terms of their reliable, reproducible applicability in research. For this purpose, we used the model of Lutz et al. (1995) due to its clearly defined and coherent structure: This model classifies attachment within the dimensions of maternal/paternal care and control (overprotection), respectively. It is therefore a suitable instrument to investigate attachment parameters in the context of other variables drawn from other tests such as symptoms or influencing aspects.

Using the paradigm of Lutz et al. (1995) we hypothesized – based on the concept of neuroticism (von Georgi 2006) – that children with parents and/or grandparents with unbalanced attachment styles (e.g., less care and/or more control) have more mental symptoms due to a reduced ego-strength. In another sample (n=134) using this approach, a positive influence of

parental care and a negative influence of parental over-control on the self-image of offspring in adulthood could be shown (Gebhardt et al. 2019). In the current sample we investigated the significance of attachment parameters of the grandparents on the attachment of the parents and finally on the symptoms at child's level.

SUBJECTS AND METHODS

Analytic Plan

For investigating the influence of attachment parameters of previous generations on the symptoms of children, psychiatric inpatients in a mother-child setting with children in the toddler age should be cross-sectionally examined using questionnaires on attachment parameters and children's symptoms as well as on the potential influencing factors parenting style and resilience.

Subjects

Out of 53 patients who were treated within an inpatient mother-child-setting for mothers with mental disabilities in the Department of General Psychiatry, Psychotherapy and Psychosomatics II of the Psychiatric Center Nordbaden in Wiesloch/Germany during the time period from February 2015 until March 2018 we examined n=50 mother-child dyads (middle age of mothers 31.1±6.0 years; n=28 depression, n=11 neurotic disorder, n=9 borderline personality disorder, n=1 eating disorder, n=1 ADHD) with their children (middle age of children 4.1±1.5 years; boys n=31) using questionnaires which were fulfilled by the patients. The only inclusion criterion was the participation in inpatient mother-child treatment. Exclusion criteria would have been acute psychiatric conditions such as acute psychosis or suicidality, as well as missing data within the questionnaires. Three patients were excluded due to missing data within the questionnaires. Since most mothers in a psychiatric-psychotherapeutic mother-child treatment are usually single parents and the biological fathers of the children they bring with them are often difficult to contact, we decided not to include these fathers in the study when we designed the study. The study was approved by the Ethics Committee of the Medical Association of the State of Baden-Württemberg, Germany. Patients and in case of minors their parents gave informed consent in taking part in this evaluation.

Assessment

The schedule FEB (Fragebogen zur elterlichen Bindung, Questionnaire on the Parental Attachment, Lutz et al. 1995) with the scales „maternal care“, „maternal control“, „paternal care“, „paternal control“ was used to assess attachment parameters. The FEB was constructed on the basis of the Parental Bonding Instrument (PBI) by Parker et al. (1979) which has a good reliability (retest-reliability care/control: $r=0.761/.628$, split-half-reliability care/control: $r=0.879/.739$). Parker et al. (1979)

had found in a literary search that in studies measuring parent behavior and parent attitudes, the two variables care and control (overprotection) prevail. Validation evidence was provided in various validation studies (Parker et al. 1979, Parker 1984). The FEB shows a reability of $r=0.84-0.92$ (Lutz al. 1995). The other questionnaires are equally well established, reliable and valid instruments: EFB-K (Erziehungsfragebogen-Kurzform, Educational Questionnaire, short form; Naumann et al. 2010), CBCL (Child Behavior Checklist, Achenbach 1991, 2001), RQ2 (Relationship Questionnaire, Bartholomew & Horowitz 1991), and RS-13 (Resilience Scale, Leppert et al. 2008). Both FEB and RS-13 were also used in a modified version with sufficient reability (Crohnbach's Alpha 0.7-0.9) to assess the children's perspective.

Statistical analysis

The Statistical Package for Social Sciences for Windows (IBM SPSS, Version 24.0; Armonk, NY) was used to conduct regression analyses with the FEB scales (on grandparents' level and on parents' level) as predictor variables and the RQ-2 (parents' level), EFB-K (parents' level), RS13 (parents' and child's level) and CBCL (child's level) scales as criterion variables as well as Pearson correlations. Effect sizes were given according to Cohen (1988): $f=0.10 / 0.25 / 0.40$ weak / medium / strong effect. All p values were two-tailed; the significance level was set at $\alpha<0.05$.

RESULTS

Attachment parameters on grandparents and parents' level

Grandparents' attachment patterns affected parents' attachment patterns ($R=0.479$, p [df = 2; 74, $F=5,064$]= 0.012 ($f=0.30$)): Grandfather's care predicted mother's care for her own children (Trend: $\beta=0.337$; $p=0.056$; correlation: $r=0.478$; $p=0.002$). In contrast, a grandfather's over-control correlated with less mother caring

for her children ($r=-0.454$; $p=0.005$). While caring at the grandmother and grandfather level correlated negatively with a rejecting-avoiding attachment style according to RQ2 at the parents' level ($r=-0.464$; $p=0.010 / r=-0.333$; $p=0.084$), maternal control behavior correlated negatively with clinging (seeking emotional closeness) attachment style ($r=-0.360$; $p=0.036$) (see figure 1).

Attachment and children's symptoms

Regression analysis did not succeed in a significant prediction of children's symptoms by parental attachment patterns ($R=0.489$, p [df = 7; 27, $F=1,299$] = n.s.), however, maternal care at the parents' level correlated with less attentional problems ($r=-0.403$; $p=0.013$) or externalizing problems ($r=-0.353$; $p=0.032$) as well as less anxious ($r=-0.284$; $p=0.088$) and less oppositional symptoms ($r=-0.306$; $p=0.066$) on the child's level. Controlling behavior by the fathers showed a trend towards increased problems in the area of profound developmental disorders ($r=0.348$; $p=0.089$).

Attachment and parenting style

There was no significant prediction of the grandparent attachment pattern on the parenting style according to EFB-K. However, on parents' level a secure attachment style according to RQ2 predicted a less overreacting parenting style ($R=0.632$, p [df = 4; 6,353, $F=4,832$] = 0.004 ($f=0.66$); $\beta=-0.353$; $p=0.036$). On the other hand, overreactive behavior was more likely predicted by an anxious-avoiding ($\beta=0.371$; $p=0.035$) or clinging attachment style ($\beta=0.339$; $p=0.044$).

Attachment and resilience

There were no significant attachment predictors for the resilience of the patients or their children. However, control behavior at grandfather level correlated negatively with the resilience of the mothers ($r=-0.397$; $p=0.033$).

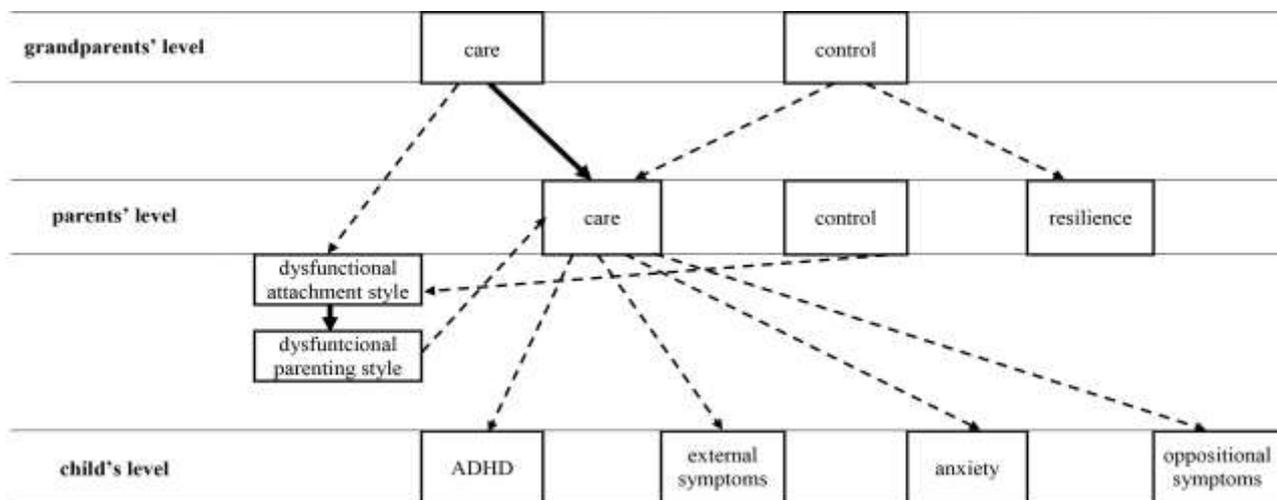


Figure 1. Influences of attachment, parenting, resilience dimensions as well as child's symptoms among the three generations (bold arrows = reinforcement; dashed arrow = weakening)

DISCUSSION

To our knowledge no study has so far investigated attachment parameters over three generations down to the symptom level of children according to the paradigm of Lutz et al. (1995) along the dimensions of maternal / paternal care and control. While another investigation showed the positive influence of parental care and the negative influence of parental over-control on self-image in adulthood (Gebhardt et al. 2019), in the present study, the influence of these attachment dimensions on those of the next generation and on the child symptom level was taken into focus: once again, care emerged as a central protective element across the generations, while control behavior at the (grand-) parents' level led to negative effects on the symptoms and resilience of the next generation. Dysfunctional attachment behavior at grandparents' level correlated with that at parents' level, which in turn correlated with an increase in internal and external psychological abnormalities at child's level.

As well, resilience at parents' level was disturbed by increased control at grandparents' level. An earlier study showed that ego-strength is positively influenced by parental care and negatively by parental control behavior (Gebhardt et al. 2019). It seems evident that self-esteem is closely related to resilience, what underlines our current finding as well the concept of neuroticism (von Georgi 2006). As well, a recent study showed that associations between parent-child relationships and adolescent resilience were primarily mediated by self-esteem (Tian et al. 2018). These authors conclude from their results that adolescent resilience promotion programs should focus on improving parental support in a family context and developing individual self-esteem.

A relationship between the attachment pattern at parents' level with resilience of their child could not be found. One reason for this could be that the examined mothers have already started therapy, i.e. represent a population that has a particular interest in optimizing the mother-child relationship despite mental illness. Since children of a parent with mental disabilities have a 4-fold higher risk of developing psychological symptoms (see Matthejat & Remschmidt 2008), parent-child institutions have a special responsibility to identify dysfunctional attachment patterns and offer appropriate therapeutic support.

In our study two attachment styles show direct connections with the parenting style, which in turn has a direct impact on the mother's caring behavior: an anxious-avoiding or a clinging attachment style (RQ2) predicted overreactive behavior as parenting style (EFB-K). In order to find out more about the role of parenting, we carried out a regression analysis based on parenting as predictor variable: Interestingly, the parenting style had an impact on the attachment style ($R=0.527$, p [df = 2; 126, $F=8,287$] = 0.001 ($f=0.36$)): The child found his mother less caring if she showed an overreacting parenting style ($\beta=-0.394$; $p=0.006$; correlation: $r=-0.477$;

$p=0.001$) or - as a trend - a (too) compliant parenting style (trend: $\beta=-0.254$; $p=0.068$; correlation: $r=-0.352$; $p=0.016$). Thus, a dysfunctional parenting style itself was predictive for a less caring attachment (FEB) from the child's perspective. We interpreted this phenomenon in that way, that the parenting style seems to play a mediator role for the development of attachment between mother and child, whereas resilience might mediate between attachment influences and the outbreak of mental disorders. Resilience itself might be mediated by self-esteem (Tian et al. 2018).

The manifestation of deficient attachment styles finally comes through in the mental symptoms on child's level: especially maternal care has an impact on the reduction of attentional deficits, anxiety, external and oppositional symptoms, whereas paternal controlling behavior showed a trend towards increased problems in the area of profound developmental disorders. Regression analyses did not succeed in a significant prediction of mental symptoms on child's level by attachment parameters, what can be traced back to the fact that it was a comparatively small sample and a comparably high number of variables. In our view, in a larger sample, the regression analysis should become significant. Interestingly we found no relationships between parental style and mental symptoms on child's level, which leads to the assumption that attachment is much more fundamental and the parenting style is rather an epiphenomenon or a mediator.

Some aspects can be explained by neurobiological mechanisms. According to a theory of Antonucci et al. (2018) attachment insecurity might share a common neurobiological substrate with neurodevelopmental disorders. Fujiwara et al. (2019) could show how genetic and peripheral markers on the oxytocin system interact with experienced parenting to shape bonding across three generations. The research group around Michael Meaney (e.g., Zhang et al. 2004, McGowan et al. 2009, Weaver et al. 2014) has been able to create an excellent conclusive model over the years of how maternal care behavior is related to methylation of glucocorticoid receptor genes, which can be seen as a biological correlate for stress resistance or resilience, which is inherited through epigenetic mechanisms. So here on a biological level we have what we were able to present in the present study on a psychological-clinical level.

More clinical and neurobiological studies are warranted. As well, integrating models investigating different entities (e.g., Debbané et al. 2016) are helpful, especially when psychological phenomena and its mediating factors (e.g., attachment, resilience, parenting, emotion, mentalization) experience a neurobiological reflection (e.g., (epi-)genetics, neurotransmission, cytokines, endocrine hormones, neuroplasticity), but also neurobiological findings should be found in a psychological context.

The evaluation methodology has potential bias influences: the situation of the children was described by the mothers, since the children were too young to be

interviewed in a differentiated manner. As well, no information on the paternal grandparents was available, due to the lack of direct questioning of the children's fathers. It is therefore recommended to include fathers or even father-child dyads, if they can be recruited, in future studies based on the results of the study. In addition, parameter relationships were established within a sample using multivariate analyzes, but differences to a control group should still be worked out in subsequent studies. However, the strength of this naturalistic study is the empirical collection and data analysis of attachment parameters, attachment style, parenting style, resilience and symptoms over three generations and thus enables an interesting overall overview of relationships.

Implications for Practice

The study strengthens the need of supporting care attachment patterns and diminishing parents' overcontrolling behavior in order to provide best education environment and to prevent the development of mental symptoms already in childhood. Hereby, the parenting style seems to play a mediator role for the development of attachment between mother and child, with resilience mediating between attachment and the onset of mental disorders. The results point to the crucial role of attachment parameters for mental development with corresponding implications for psychotherapy. Thus, transformation processes in individuals can only be initiated by means of psychotherapeutic strategies, for example in an emotion-focused therapy (Greenberg 2004), taking into account the underlying attachment parameters. The knowledge of the impact of attachment parameters is helpful for a multitude of professions and institutions, such as child and adolescent psychiatrist and psychotherapists as well as psychiatrist in mother-child units up to educational counseling centers and last but not least private individuals, namely parents.

CONCLUSIONS

As a conclusion, the results suggest that attachment patterns have great importance on the psychological development of individuals over several generations and, especially, have an impact on the symptoms of children of patients with mental disabilities. Thus, attachment parameters should definitely be considered and included in each psychotherapy, and in particular in mother-child therapy.

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Contribution of individual authors:

Stefan Gebhardt was engaged in design of the study, literature searches and analyses, statistical analyses, interpretation of data, and manuscript writing. Stephanie Hoss was involved in design of the study, data collection, statistical analyses, interpretation of data, and manuscript reviewing.

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