Maternal attachment representations, early mother-infant co-regulation, and infant attachment as predicting adolescent personality functioning: A 17-year longitudinal study

Johanna Behringer [1], Florian Juen [2], Johannes C. Ehrenthal [3], Julia Festini [4],
Fabienne Helter [1], Lucia Schmidt [4], Julia König [1], & Gottfried Spangler [4]

Theoretical Background

The re-conceptualisation of severity of personality disorders in the Alternative Model of Personality Disorders (AMPD) in terms of impairments in self and interpersonal functioning (Sharp & Wall, 2021) builds a bridge between diagnostic manuals (DSM-5 and ICD-11) and psychodynamic concepts of personality structure. Psychodynamically (Arbeitskreis OPD, 2024; Kernberg & Caligor, 2005; Seiffge-Krenke & Hau, 2021), structural impairments of self and object relations are viewed as "biographically acquired and persisting dispositions for mental health problems" (Akın et al., 2023 p. 2; see also Fonagy et al., 2003, Luyten et al., 2020, Ogden, 2004; Winnicott, 1965, 1975). **Mentalization** (Luyten et al., 2020), **identity integration** (Kernberg & Caligor, 2005; Hörz-Sagstetter et al., 2018) and **attachment** formation (Luyten et al., 2021) are regarded as core processes linking early relationship experiences with later mental health outcomes.

These conceptual developments have yielded numerous measures (interviews and self-reports) with good psychometric properties (OPD-3, 2024; Ehrenthal et al., 2024; Hörz-Sagstetter et al., 2021; Resch et al., 2020; Seiffge Krenke & Hau, 2021; Vierl et al., 2022).

So far, longitudinal evidence for the assumption of biographical acquisition of impairments in personality functioning / personality structure is scarce (Fleck et al., 2021) or is limited to high-risk samples (Carlson, Egeland, & Sroufe, 2009; O'Gorman & Meyer, 2024).

The current study draws on data from a German longitudinal project. Starting in 2007, in the last term of mothers' pregnancies, in-depth assessments of early family relationships and attachment formation were conducted with a normative sample (Behringer et al., 2011; 2012).

Aims and Hypotheses

We aim to explore in how far adolescent personality functioning according to DSM-5 and ICD-11 and psychodynamic concepts is rooted in early mother-infant interaction and early attachment dynamics. We focus on outcomes of identity integration, empathy, and attachment competences as well as global functioning.

H1. From an intergenerational perspective, we expect adolescent personality functioning to be predicted by mothers' attachment representations regarding childhood experiences with parents and specific experiences with their partner.
H2. Maternal sensitivity in the infant's first year and infant attachment security with mother at one year predict global personality functioning and specific aspects such as identity, mentalization and attachment-related competences.
H3. Psychoanalytically informed aspects of mother-infant regulatory processes, e.g. mother-infant fit, infant orientation, predict adol. personality functioning.
H4. Parental separation moderates these associations.

Method: Early measures

The **original sample** consisted of 74 mothers (mean age = 31 yrs) recruited mainly from birth clinics in the last trimester of pregnancy.
The **Adult Attachment Interview** (AAI; George, Kaplan & Main, 1985; Main et al., 2002) and the **Current Relationship Interview** (CRI; Crowell & Owens, 1996; Crowell et al., 2002) were administered in the 8th or 9th month of pregnancy to assess mothers' childhood-related and partner-related attachment status.
Six months postpartum, mothers were observed with their infants as they were playing while filling in a questionnaire, and as they were changing nappies.
Mother-infant interactions were coded according to Ainsworth's **sensitivity** scale and according to the **Containment and Object Relations Scales** (Behringer, Briggs, et al., 2016; Briggs & Behringer, 2012). The scales focus on maternal containment, mother-infant fit (e.g. accommodating: child giving in), infant's way of regulating arousal, and infant's focus of orientation (e.g. to mother vs. away from mother).
At age 13-15 months, the **Strange Situation Procedure** (SSP; Ainsworth 1974) was conducted to assess infant attachment with mother.

Method: Adolescent outcome measures

Personality functioning according to the AMPD at age 16 / 17 is currently (2024) being assessed through online administration (SoSci Survey) of the Levels of Personality Functioning Questionnaire 12-18 (**LoPF-Q 12-18**; Kerr et al., 2023) consisting of 97 items.
Scales: Identity, Self-direction, Empathy, & Intimacy. A total score can be calculated.
Identity, empathy and the LoPF-Q total score were used as developmental outcomes.

Personality structure / functioning according to the psychodynamic tradition is being assessed using the Operationalized Psychodynamic Diagnosis in Childhood and Adolescence Structure Questionnaire (**OPD-CA-SQ**; Schrobildgen et al., 2019; Akin et al., 2023), which consists of 81 items.
Scales: Control, Identity, Interpersonality, and Attachment. A total score can be calculated.
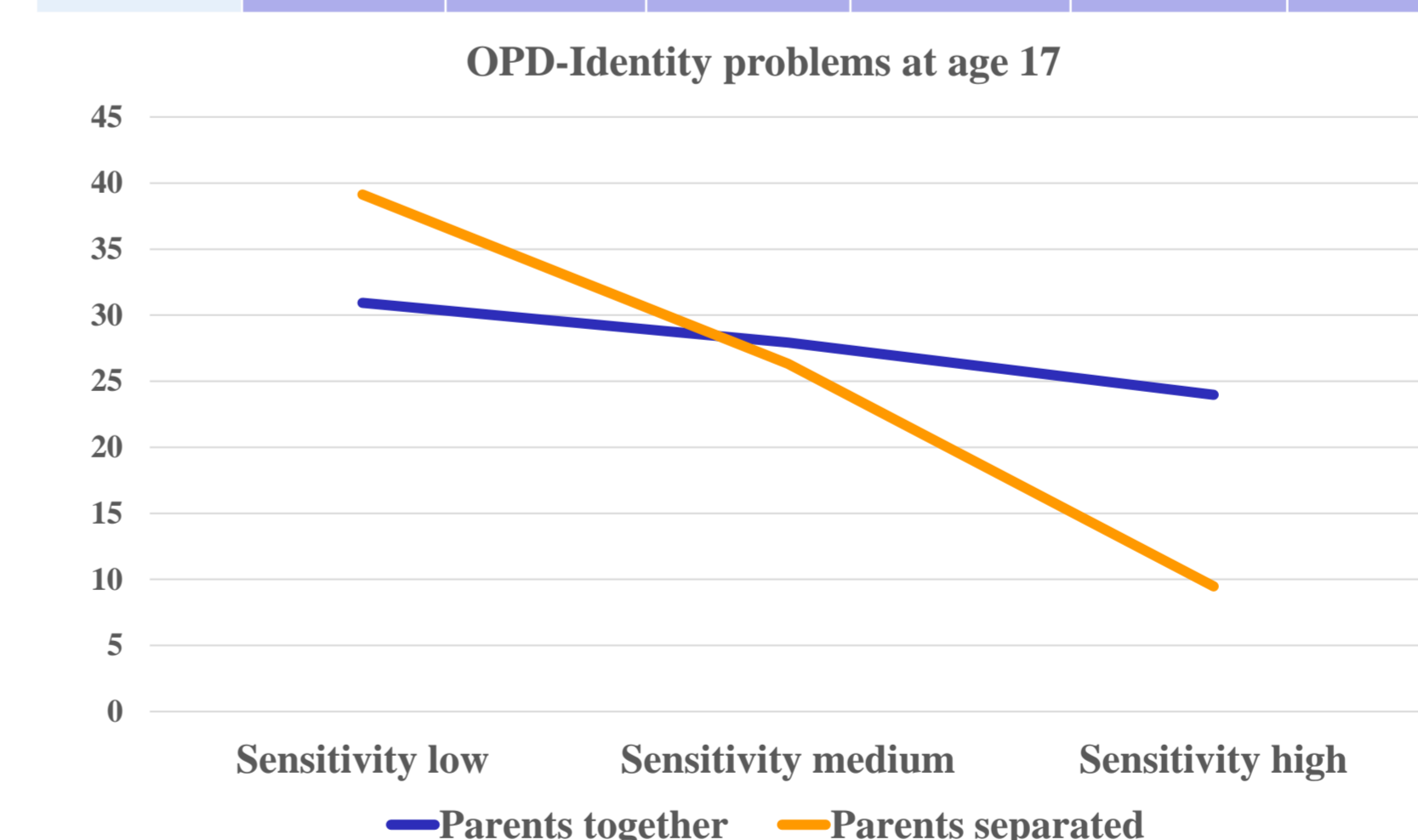**Identity, Attachment, and the OPD-CA-SQ total score** were used in our statistical analyses.

Results and Discussion

	AAI coherence	CRI coherence	CRI valuing intimacy	Sensitivity nappy change	Sensitivity question-naire	Inf. attachmt security
LoPF Identity	.05	-.11	-.16	**-.44 ***	-.15	-.03
LoPF Empathy	-.08	-.17	-.19	-.22	.16	-.24
LoPF total	.04	-.12	.24	**-.52 ***	.01	-.08
OPD Identity	.12	-.18	**-.31 ***	**-.36 ***	-.07	.19
OPD attachmt	.03	-.09	-.25	**-.40 ***	-.10	.15
OPD total	.12	-.15	**-.28 ***	**-.41 ***	-.10	.17

Spearman correlations; * significance (1-tailed) $p \le .05$; ** p < .01

Results from $n = 36$ adolescent participants (19 girls).
Re-recruitment and data collection are ongoing.
Mean age = 16.5 years
$n = 9$ report parental separation.
Early attachment (incl. valuing of intimacy in the parental couple relationship) and sensitivity as predicting personality functioning.

	Containing fit	Conflictual fit	Accommodating fit	Orientation to mother	Orientation away fr mother	Rigid voice and body
LoPF Identity	**-.39 ***	**.43 ***	**.38 ***	-.23	**.47 ***	.15
LoPF Empathy	-.09	-.11	**.36 ***	-.12	.24	-.01
LoPF total	**-.29 ***	**.27 ***	**.33 ***	-.18	**.36 ***	.24
OPD Identity	**-.42 ***	**.36 ***	**.38 ***	-.14	**.36 ***	**.29 ***
OPD attachmt	-.20	.14	**.25 +**	**-.31 ***	**.34 ***	.05
OPD total	**-.32 ***	**.29 ***	**.37 ***	-.19	**.35 ***	.20

Psychoanalytically informed aspects of mother-infant co-regulation (mother-infant fit, infant orientation, and infant rigidity: high screaming voice and body stiffening) as predicting personality functioning.

OPD-Identity problems at age 17
— Parents together — Parents separated

Results from PROCESS analyses using parental separation as a moderator in the prediction of personality functioning.
In the parental separation group, lower sensitivity predicts higher levels of identity problems.
Model is also significant for LoPF Identity and OPD total score.
Interaction (outcome = identity):
$F(1, 32) = 4.68$, $p < .05$; $n = 36$

Discussion
- Early mother-infant regulatory processes (but not attachment) predict adolescent personality functioning, particularly identity integration.
- The context of observing maternal sensitivity seems to affect its predictive power.
- Parental separation appears to compromise identity integration processes. In cases of parental separation, early maternal sensitivity is of particular relevance.
- This is work in progress: The sample is not yet complete.
- Statistical power will increase as more participants return to the study.
- Next steps: complete re-recruitment and questionnaires; conduct OPD-CA interviews

References / Acknowledgments

References (selection)
Akin, A., Goth, K.; Seiffge-Krenke, I.; Obbarius, A.; Winter, & Sarrar, L. (2023) Operationalized Psychodynamic Diagnostic of Adolescents in Light of the New ICD-11 Model of Personality Functioning: Personality Structure, Psychodynamic Conflicts, and Mental Health Problems. Children 10 (7). DOI: 10.3390/children10071095.
Behringer, J.; Reiner, I.; Spangler, G. (2012 / 2016): Mütterliche Bindungsrepräsentation, Paarbindung und Elternverhalten [Maternal attachment representation, couple attachment, and parenting]. In G. Gloger-Tippelt (Ed.): Bindung im Erwachsenenalter [Attachment in Adulthood], pp. 319–354. Bern: Huber.
Behringer, J., Reiner, I. & Spangler, G. (2011) Maternal representations of past and current attachment relationships, and emotional experience across the transition to motherhood: A longitudinal study. Journal of Family Psychology 25 (2), 210–219. DOI: 10.1037/a0023083.
Briggs, S. & Behringer, J. (2012) Linking infant observation research and other paradigms. In C. Urwin &J. Steinberg (Eds.). Infant observation and research: Emotional processes in everyday lives, 149-159. NY: Routledge
Ehrenthal, J.C., et al. (2023) Measuring personality functioning with the 12-item version of the OPD-Structure Questionnaire (OPD-SQS): reliability, factor structure, validity, and measurement invariance in the general population. Frontiers in psychology 14. DOI: 10.3389/fpsyg.2023.1248992
Carlson, E., Egeland, B., & Sroufe, A. (2009) A prospective investigation of the development of borderline personality symptoms. Development and Psychopathology 21 (4), 1311-1334.
Fleck, L. et al. (2021) Maternal bonding impairment predicts personality disorder features in adolescence: The moderating role of child temperament and sex. Personality disorders 12 (5), 475–483.
Kerr, S., McLaren, V., Cano, K., Vanwoerden, S., Goth, K., & Sharp, C. (2023) Levels of Personality Functioning Questionnaire 12-18 (LoPF-Q 12-18): Factor structure, validity, and clinical cut-offs. Assessment 30(6), 1764–1776. DOI: 10.1177/10731911221124340.
Seiffge-Krenke,I.& Hau,S. (2021) The Operationalized Psychodynamic Diagnostic for Children Adolescents (OPD-CA-2): a new diagnostic method to determine psychodynamic constructs. Nordic Psychology 73(4), 285ff.
Sharp, C. & Wall, K. (2021) DSM-5 Level of personality functioning: Refocusing personality disorder on what it means to be human. Annual Review of Clinical Psychology 17, 313–337.
Vierl, L., Juen, F., Benecke, C., & Hörz-Sagstetter, S. (2023) Exploring the associations between psychodynamic constructs and psychopathology: A network approach. Personality and Mental Health, 17 (1), 40-54.

Contact:
Dr. Johanna Behringer, Dept. of Clinical Psychology, Catholic University of Eichstätt–Ingolstadt — **johanna.behringer@ku.de**

IAC Rouen 2024

[1] Catholic University of Eichstätt-Ingolstadt, [2] Practice for Psychotherapy & Psychoanalysis, Munich, [3] University of Cologne, [4] Friedrich Alexander University of Erlangen-Nürnberg