

From 320 g in Incubator to Adulthood: Association Between Parental Bonding, Psychopathology and Consequences of Prematurity in a High Risk Population

Walter, C., Beese, J., Kölle, S., Sieber, S., Geis, L., Veit, S. & Brisch, K.H.

University Hospital of Munich | Dr. von Hauner Children's Hospital | Department of Pediatric Psychosomatic Medicine and Psychotherapy

INTRODUCTION

A "preterm behavioural phenotype" characterised by attention, anxiety and social difficulties exists (Johnson, Marlow 2017) and long-term risk associated with adverse socio-emotional outcomes in young adults born very preterm (VP) are poorly understood, since longitudinal studies beyond puberty are scarce (Linsell, 2016).

DESIGN

Follow-up in an ongoing prospective longitudinal study (from incubator to adulthood) about the long-term socio-emotional development of infants (<1500g) born VP.

OBJECTIVES

This study investigates psychological distress of young adults born VP and its association with self-reported parental bonding.

Table 1
Sociodemographic characteristics of subjects

	Sample (n = 69)	
	M	SD
Age of teenager	18.77	1.11
Birthweight	940.61	300.78
Weeks of Gestation (g)	27.82	2.55
Age of mother	49.76	6.05
Age of father	50.91	6.49
	n	%
Sex of teenager		
male	31	44.3
female	39	55.7
Family Income (netto)		
≤ 2.000 Euro	8	12.2
≤ 3.000 Euro	20	30.3
≤ 4.000 Euro	12	18.2
≤ 5.000 Euro	11	16.7
≤ 6.000 Euro	6	9.1
> 6.000 Euro	9	13.6
Education mother		
Primary, basic vocational	1	1.6
Lower secondary	36	57.3
Higher secondary	19	30.1
Higher professional, university	7	4.8
Family status mother		
married	52	81.3
married but separated	2	3.1
single	1	1.6
separated/ divorced	9	14.1
Employment situation mother		
unemployed	1	1.6
with paid job	68	98.4

Notes. M = Mean; SD = Standard Deviation; % = percentages

PARTICIPANTS

N= 84 (54 singletons/30 multiples) teenagers born VP (weeks of gestation: 24-32) at the mean age of 18.77 participated with their mothers (Table 1). For purposes of comparison, only data on the firstborn child (n = 69) are reported in this poster.

Table 2
Parental Bonding (Classification)

		Mother	Father
Affectionate Constraint	high care and high protection	9	5
Optimal Parenting	high care and low protection	42	39
Affectionless Control	high protection and low care	7	3
Neglectful Parenting	low care and low protection	2	10

Opposite Bonding in the two Parents

Note. Assignment to „high“ or „low“ categories is based on a care score of 27.0 and a protection score of 13.5 for mothers, and a care score of 24.0 and a protection score of 12.5 for fathers.

METHODS

Psychological distress was measured by the Symptom Checklist 90-Revised (SCL-90-R) (Derogatis 1994; German Version) completed by the teenagers. Parental Bonding was assessed by the Parental Bonding Instrument (Parker et al. 1979; German Version): Teenagers evaluated "Care" and "Protection" within the first 16 years of life for mother/father separately.

Table 3
Means, Standard Deviation and Intercorrelations of Variables

	M	SD	1	2	3	4	5	6
1 Birthweight	944.71	301.04	-					
2 Care Mother	31.69	4.08	-.188	-				
3 Protection Mother	9.80	7.17	.312*	-.477**	-			
4 Care Father	29.02	6.34	-.114	.464**	-.193	-		
5 Protection Father	7.14	5.50	.057	-.455**	.669**	-.237	-	
6 General Severity Index (GSI)	0.47	0.45	.091	-.426**	.431**	-.489**	.369**	-
7 Subscale Anxiety	0.44	0.58	.114	-.456**	.491**	-.449**	.298*	.886**

Note. *p < .05 **p < .01. M = Mean; SD = Standard Deviation.

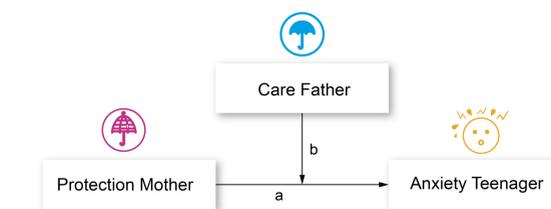


Figure 1. Moderation Model

PRELIMINARY RESULTS

In our sample the mean of psychological distress did not significantly differ from SCL-90-R normative sample (T-score 50), $t(62) = .359$, $p = .721$. However, 16 (22.9%) teenagers suffered clinical distress (General-Severity-Index (GSI)-T-score, or any two subscales T-scores ≥ 63) and had to be referred to psychotherapy.

Findings indicate an association between psychological distress and parental bonding (Table 3): Parental care correlated negatively with the GSI-Score (mother: $r = -.426$, $p < .001$; father: $r = -.489$, $p < .01$). Parental protection correlated positively with the GSI-Score (mother: $r = .431$, $p < .01$; father: $r = .369$, $p < .001$). Further, there was a correlation between anxiety (subscale SCL-90-R) and parental care (mother: $r = -.456$, $p < .01$; father: $r = -.449$, $p < .01$) as well as with protection (mother: $r = -.491$, $p < .01$; father: $r = .298$, $p < .05$).

Table 4
Conditional indirect effects of maternal protection on anxiety at values of the moderators

Care of Father	B	SE	t	p	95 % CI lower limit	95 % CI upper limit
23.461	0.044	0.011	4.105	.000	0.022	0.065
29.339	0.023	0.008	3.044	.004	0.008	0.038
35.218	0.002	0.013	0.193	.848	-0.023	0.027

Note. SE = Standard error; CI = Confidence interval.

To test the hypothesis whether there is an effect of *Protection of mother* on the subscale anxiety moderated by *Care of Father* we conducted conditional process analyses – a regression-based approach – using the SPSS® Makro 'PROCESS' (v. 2.16).

In the first step, path a (Fig. 1) is estimated. There was a significant effect of *Protection of mother* on subscale anxiety ($p = .005$): the higher the maternal protection, the higher the anxiety of the teenager. Furthermore, there was a significant interaction between *Protection of mother* and *Care of Father* ($p = .022$).

To investigate the moderation by *Care of Father*, the effects were tested at three levels (mean \pm SD). Table 4 summarizes all conditional direct (moderated) effects of *Protection of mother* on anxiety of the teenager at values of the moderators (Fig. 1, path b). We found an effect of *Protection of Mother* on the anxiety score if *Care of Father* was one standard deviation below the mean ($p < .001$) or on average ($p = .004$). There was no such effect if *Care of Father* was one standard deviation above the mean ($p = .848$).

This results suggest, the higher the *Care of Father*, the lower the effect of *Protection of Mother* on teenager's anxiety (Fig. 2).

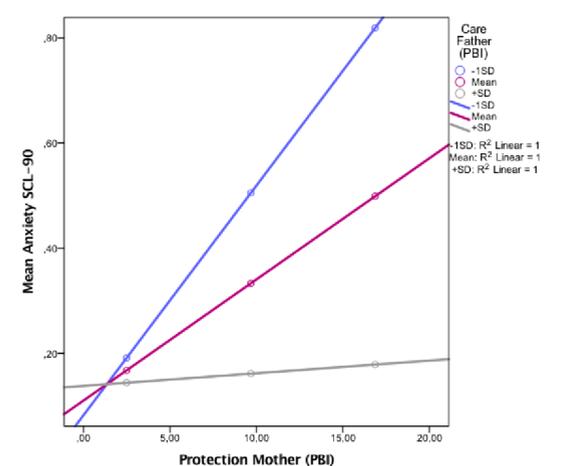


Figure 2. Association between protection and anxiety for low (-1SD), average (Mean) and high (+1SD) care of father

DISCUSSION

Findings stress the protective role of parental bonding on psychological well-being after pre-maturity and beyond: Particularly, very sensitive care of the father seems to buffer negative effects of maternal protection on anxiety symptoms of adolescents born very preterm.

Concluding, preventive caregiving programmes for both parents which start immediately after delivery are an urgent need.