

## Supplementary Material

**Article Title:** Magnitude and Correlates of Symptomatic, Global Illness and Social Functioning Response, Out-Of-Home Placement, and Length of Stay in 1,189 Consecutively Hospitalized Children and Adolescents With Mental Disorders

**Author(s):** Viktor B. Nöhles, MA; Charlotte Jaite, PhD; Kerstin Rubarth, PhD; Fabiola H. Heuer, MSc; Katja Bödeker, PhD; Laura Golz, MSc; Sibylle M. Winter, MD; Christoph U. Correll, MD

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### **DISCLAIMER**

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Supplementary Table 1: Baseline predictors in the initial model of the backward regression analysis with each of the 5 outcomes

Demographics	Sex
	Age
Home environment	Mental disorder in family
	Non-mental disorder in family
Pregnancy	Complication/ risk factors during pregnancy, birth or postpartum period
Psychopathology	Disturbance of social interaction
	Disturbance of social behavior
	Disturbance of drive, attention and impulse control
	Disturbance of psychomotor behavior
	Disturbance of speech and language
	Anxiety disorder symptoms
	Disturbance of mood and affect
	Obsessive-compulsive disorder symptoms
	Eating disorder symptoms <sup>a)</sup>
	Functional and somatoform disorder symptoms
	Impaired memory, orientation, consciousness or alertness
	Substance abuse/ dependence symptoms
	Psychotic symptoms
	Somatic status
Abnormality overall neurological assessment	
Abnormality overall somatic assessment	
Primary mental health diagnosis, (ICD-10, axis 1)	Number of mental health diagnoses
	Schizophrenia, schizotypal or delusional disorder
	Any eating disorder
	(Recurrent) depressive disorder or Dysthymia
	Autism-spectrum disorder
	Oppositional-defiant/conduct disorder
	Dissociative or somatoform disorder
	Attention- deficit/hyperactivity disorder or hyperkinetic disorder
	Phobic anxiety disorder and other anxiety disorder
Comorbid mental health diagnosis, (ICD-10, axis 1)	Personality disorders
	Obsessive-compulsive disorder
	Tic disorder
	Enuresis and encopresis
	Adjustment disorder and acute stress disorder
	Mental and behavioral disorder due to use psychotropic substances
	Emotional disorders in childhood
	Attachment disorder
	Persistence other/ non-specified affective disorder
	Circumscribed developmental disorder
Disorders of school skills	
Circumscribed developmental disorder of motor functions	
Intelligence	> 114
	< 85
Associated abnormal psychosocial factors	Number of abnormal psychosocial factors
	Physical abuse in the family
	Sexual abuse in or outside the family
	Bullying experience by student or scapegoat by teacher

a) Excluded, since Pearson's correlation with "any eating disorder" was >0.700

Supplementary Table 2: Treatment characteristics of psychiatrically hospitalized children and adolescents

Characteristic	Total (n=1,189) <sup>a)</sup>	Schizophrenia, schizotypal or delusional disorder <sup>b)</sup> (n=22)	Any eating disorder <sup>b)</sup> (n=354)	(Recurrent) depressive disorder or Dysthymia <sup>b)</sup> (n=231)	Autism-spectrum disorders <sup>b)</sup> (n=48)	Oppositional-defiant/conduct disorder <sup>b)</sup> (n=231)	Dissociative or somatoform disorders <sup>b)</sup> (n=70)	Attention-deficit/hyperactivity disorder or hyperkinetic disorder <sup>b)</sup> (n=47)	Phobic anxiety disorder and other anxiety disorders <sup>b)</sup> (n=55)
<b>Treatment Characteristics</b>									
<b>Psychotherapy n (%)</b>									
Type of psychotherapy [n=985]									
Cognitive behavioral	608 (61.7)	12 (80.0)	185 (60.3)	107 (57.8)	24 (60.0)	114 (58.8)	35 (64.8)	23 (59.0)	38 (74.5)
Psychodynamic	279 (28.3)	3 (20.0)	77 (25.1)	62 (33.5)	12 (30.0)	66 (34.0)	15 (27.8)	11 (28.2)	10 (19.6)
Cognitive behavioral and psychodynamic	98 (9.9)	0 (0.0)	45 (14.7)	16 (8.6)	4 (10.0)	14 (7.2)	4 (7.4)	5 (12.8)	3 (5.9)
Number of psychotherapeutic sessions [n=1,177]									
does not apply	31 (2.6)	1 (4.5)	4 (1.1)	5 (2.2)	0 (0.0)	5 (2.2)	4 (5.7)	1 (2.1)	0 (0.0)
1-5 sessions	331 (28.1)	8 (36.4)	167 (47.6)	52 (22.6)	9 (18.8)	36 (15.6)	12 (17.1)	10 (21.3)	9 (16.4)
6-25 sessions	815 (69.2)	13 (59.1)	180 (51.3)	173 (75.2)	39 (81.3)	190 (82.3)	54 (77.1)	36 (76.6)	46 (83.6)
>25 sessions	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)

<sup>a)</sup> n=104 without a main diagnosis and n=27 without information; <sup>b)</sup> diagnoses ordered from left to right according to diagnostic primacy in case of comorbidity with other "primary" diagnoses

Supplementary Table 3: Outcomes of univariate Analyses of dichotomies variables by treatment characteristics of children and adolescents at time of psychiatric hospitalization

Characteristics	Symptom response				Global illness outcome response				Good psychosocial functioning at discharge				Recommended out-of-home-placement except day care				Length of stay				
	Total	n (%)		p-value	Total	n (%)		p-value	Total	n (%)		p-value	Total	n (%)		p-value	Total	x̄ (SD)	p-value		
		Yes	No			Yes	No			Yes	No			Yes	No						
<b>Psychotherapy</b>																					
Psychotherapeutic treatment	Yes	601 (100.0)	502 (97.7)	<0.001	1,117	308 (100.0)	797 (98.5)	0.026	1,079	190 (99.5)	880 (99.1)	0.710	1,177	426 (98.6)	720 (96.6)	0.042	1,172	65.0 (36.7)	0.212		
	No	0 (0.0)	12 (2.3)		0 (0.0)	12 (1.5)	1 (0.5)		8 (0.9)	6 (1.4)	25 (3.4)		55.9 (58.4)								
<b>Type of psychotherapy</b>																					
Type of psychotherapy	Cognitive behavioral	343 (62.3)	244 (59.7)	0.564	960	179 (65.6)	409 (59.4)	0.099	923	115 (65.7)	454 (60.7)	0.427	985	187 (54.4)	421 (65.7)	<0.001	984	63.9 (35.0)	0.002		
	Psychodynamic	151 (27.4)	125 (30.6)		65 (23.8)	212 (30.8)	43 (24.6)		219 (29.3)	109 (31.7)	170 (26.5)		66.6 (34.1)								
	Both	57 (10.3)	40 (9.8)		29 (10.6)	68 (9.9)	17 (9.7)		75 (10.0)	48 (14.0)	50 (7.8)		77.7 (42.3)								
<b>Characteristics</b>																					
Characteristics	Symptom response				Global illness outcome response				Good psychosocial functioning at discharge				Recommended out-of-home-placement except day care				Length of stay				
	Total	OR	95%CI	p-value	Total	OR	95%CI	p-value	Total	OR	95%CI	p-value	Total	OR	95%CI	p-value	Total	β	95%CI	p-value	
<b>Psychotherapeutic Treatment Characteristics</b>																					
<b>Number of psychotherapeutic sessions</b>																					
0-5 sessions (reference)		-	-	-	-	-	-	-	1,079	-	-	-	-	-	-	-	1,172	-	-	-	
6-25 sessions		1,115	16.91	6.75 to 42.34	<0.001	1,117	8.95	2.79 to 28.70	<0.001		7.16	1.74 to 29.57	0.006		1.42	0.93 to 2.17	0.103		29.13	23.08 to 35.19	<0.001
>25 sessions			26.99	10.49 to 69.45	<0.001		13.6	4.17 to 44.53	<0.001		13.3	3.17 to 55.77	<0.001		1.63	1.01 to 2.61	0.044		73.33	66.47 to 80.18	<0.001

Abbreviations: β = regression coefficient; CI = confidence interval; SD=standard deviation; OR = odds ratio; x̄=mean

## **Appendix 1**

### **Assessments**

Structured data collected and entered by the clinical staff as part of routine clinical care included information on sociodemographic variables, past medical and psychosocial/developmental history (including complications during pregnancy, birth, postpartum period or/ and kindergarten, residential place/status, etc), family history (parents alive or deceased, parental mental health history, children in the family, sibling position, etc), psychopathology (disturbance of social interaction, social behavior, mood and affect, etc), somatic-neurological findings, mental health diagnoses, treatment modalities (psychotherapeutic, medication, etc), treatment outcomes (symptom changes, global changes, social functioning) and recommendations at discharge (location, medication, psychotherapy, etc).

In 2009, several variables of the standardized data capture system were removed or modified. Information from the two periods (2004-2008 and 2009-2015) regarding the same variables/dimensions were combined, and various variables or their coding were merged to harmonize measures. Body mass index (BMI) percentiles were calculated according to Kromeyer-Hauschild.<sup>49</sup>

## **Appendix 2**

### **Statistical Analyses**

Analyses included descriptive statistics for sample characteristics of the total as well as subsamples of all primary diagnostic groups. Univariate analyses of dichotomous dependent outcomes (SR, GIR, SF, OOHP) were performed with Pearson's chi-square test for nominal scaled independent variables and logistic regression for ordinal-scaled (creating a dummy variable) or interval-scaled independent variables. For the interval-scaled dependent outcome (LOS), t-test was performed for dichotomous independent variables, analysis of variance for nominal independent variables and linear regression for ordinal-scaled (creating a dummy variable) or interval-scaled independent variables.

Five separate multivariable, backward elimination regression analyses were conducted within the initial model including all independent variables, except those which multicollinearity defined as Pearson correlation  $>0.7$ . The only eating disorder diagnosis and eating disorder symptoms had a Pearson correlation  $>0.7$  and we excluded eating disorder symptoms.

All calculations were performed with SPSS 27, with two-sided tests,  $\alpha=0.05$ , and without correction for multiplicity due to independent interest in each of the 5 outcomes and correction for effects of the other variables contained in the final model by using regression analysis.