Supplementary

Table S1 Summary of reviewed articles

Psychopathology	Reference	Clinical	Specific psychopathology	Therapy	Sample Size	Age (years)	Female/male	Effect size
Anxiety	Capron *et al.*, 2016	No	Anxiety sensitivity	CBM-I; PIM	Intervention (CBM-I)=48; Control (PIM)=41	18.87 (1.37)	73/16	Intervention *vs.* Control t=5.19, β=0.33, P<0.001
	De Hullu *et al.*, 2017	No	Social and test anxiety symptoms	CBM; CBT	Intervention (CBT)=84; Intervention (CBM)=86; Control (no intervention)=70	12–16	174/66	Intervention *vs.* Control Social anxiety: F=0.45, P=0.64 Test anxiety: F=1.14, P=0.32
	Scholten *et al.*, 2016	No	Anxiety symptoms	Dojo	Intervention (CBM-I)=70; Control=68	13.27 (0.88)	90/48	Intervention *vs.* Control Anxiety symptoms: β=0.03, SE=0.08, P=0.72 personalized anxiety symptoms: β=0.04, SE=0.05, P=0.46
	Knapp *et al.*, 2020	No	Anxiety sensitivity	ASAP-Y	Intervention=44; Control=44	12.5 (1.4)	43/45	Intervention *vs.* Control d=0.75; B=−2.13, SE=1.05, P=0.04
	Bechor *et al.*, 2014	Yes	Generalized anxiety disorder; Social phobia, or Separation anxiety disorder	ABMT	Intervention=6	11.2 (1.17)	4/2	From pre to post Anxiety: t=3.58, P=0.02; Depression: t=4.39, P=0.01
Depression	Pössel *et al.*, 2013	No	Depression symptoms	CBP	Intervention (CBP)=166; Control (nonspecific)=175; Control (no-intervention) =177	15.09 (0.76)	325/193	Intervention (CBP) *vs.* Control (nonspecific) P=0.047, g=0.29, 95% CI: [0.06, 0.52]; Intervention (CBP) *vs.* Control (no-intervention) P=0.003, g=0.30; 95% CI: [0.07, 0.53]
	Kindt *et al.*, 2014	No	Depression symptoms	OVK	Intervention (OVK)=667; Control=676	13.42 (0.77)	702/641	Intervention (OVK) *vs.* Control Completers only: OR=0.558, 95% CI: [0.351, 0.887], P<0.05; Intention to treat: OR=0.564, 95% CI: [0.378, 0.842], P<0.01
	Gest *et al.*, 2016	No	Depression symptoms	Chronotherapeutic treatments	Intervention (bright light therapy)=37; Intervention (Combined wake and light therapy)=25	–	57/5	From pre to post Combined wake and light therapy: t (24)=2.10, P=0.02; bright light therapy: t (36)=2.43, P=0.02
Eating disorder	Trainor *et al.*, 2020	Yes	Anorexia nervosa	FBT	–	15.81 (1.46)	82/13	Rates of comorbid diagnoses decreased from 54% to 26%.
	Lock *et al.*, 2016	Yes	Anorexia nervosa	FBT; SyFT	Intervention (FBT)=78; Intervention (SyFT)=80;	15.3 (1.8)	141/17	Intervention (FBT) *vs.* Intervention (SyFt) Mann-Whitney U=51.0, P=0.02
	Lock *et al.*, 2015	Yes	Anorexia nervosa	IPC; FBT	Intervention (IPC)=35; Intervention (FBT)=10	FBT=14.3 (1.5) IPC=14.6 (1.4)	41/4	Intervention (IPC) *vs.* Intervention (FBT) Cohen's d=0.82, P=0.002
	Herscovici *et al.*, 2017	Yes	Anorexia nervosa	FTFM	Intervention (FTFM)=11; Intervention (FT)=12	7.1 (2.3)	–	Intervention (FTFM) *vs.* Intervention (FT): Effect size=2.13, 95% CI: [8.47, 4.21]
	Accurso *et al.*, 2014	Yes	Anorexia nervosa	FBT; AFT	Intervention (FBT)=61; Intervention (AFT)=60	14.4 (1.6)	110/11	Intervention (FBT) *vs.* Intervention (AFT) B=0.134, P=0.086
	Le Grange *et al.*, 2012	Yes	Anorexia nervosa	FBT & AFT	Intervention (FBT)=61; Intervention (AFT)=60	14.4 (1.6)	110/11	Intervention (FBT) *vs.* Intervention (AFT) Effect Size=0.321, P=0.027
	Rienecke *et al.*, 2016	Yes	Anorexia nervosa	FBT & AFT	Intervention (FBT)=61; Intervention (AFT)=60	14.4 (1.6)	110/11	Intervention (FBT) *vs.* Intervention (AFT) in adolescents with high eating disorders differences=0.233, P=0.026
	Ciao *et al.*, 2015	Yes	Anorexia nervosa	FBT & AFT	Intervention (FBT)=61; Intervention (AFT)=60	14.4 (1.6)	110/11	Intervention (FBT) *vs.* Intervention (AFT) Communication: F (1, 82)=55.20, P=0.03; Behavior Control: F (1, 82)=57.41, P=0.008
	Eisler *et al.*, 2016	Yes	Anorexia nervosa	MFT-AN; FT-AN	Intervention (FT-AN)=82; Intervention (MFT-AN)=85	FT-AN=15.7 (1.6) MFT-AN=15.7 (1.7)	152/15	MFT-AN *vs.* FT-AN %medium BMI at 18 months post randomisation: Difference=4.11, 95% CI: [0.98, 7.24], P=0.01
	Philipp *et al.*, 2021	Yes	Anorexia nervosa	SUCCEAT	Intervention (SUCCEAT-workshop)=48; Intervention (SUCCEAT-online)=50	SUCCEAT-workshoP=14.65 (1.94) SUCCEAT-online=15.12 (1.80)	91/7	Intervention (workshop) *vs.* Intervention (online) F=0.026–0.918, Ps>0.05.
	Biney *et al.*, 2022	Yes	Anorexia nervosa	CBT (Self-esteem group intervention)	Intervention (CBT)=25; Control (TAU)=25	15.22 (1.62)	50/0	Intervention (CBT) *vs.* Control (TAU) Eating concern: Mean difference=0.66, 95% CI: [0.44, 1.28]
	Herbrich *et al.*, 2017	Yes	Anorexia nervosa	CRT	Intervention (CRT)=24; Control (TAU)=24	–	48/0	Intervention (CBT) *vs.* Control (TAU) F=0.125–2.511, Ps>0.05
	Glashouwer *et al.*, 2018	Yes	Anorexia nervosa	Computer-based evaluative conditioning intervention	Intervention=25; Control=26	16.73 (2.45)	51/0	Intervention *vs.* Control F=0.24–0.78, Ps>0.05
	Giel *et al.*, 2013	Yes	Anorexia nervosa	Lifestyle Intervention	–	13.7 (1.4)	20/21	Significant weight loss: t (39)=3.44, P<0.01
ADHD	Boyer *et al.*, 2018	Yes	ADHD	PML; SFT	Intervention (PML)=33; Intervention (SFT)=36	PML:14.54 (1.24) SFT:14.28 (1.19)	19/50	Intervention (PML) *vs.* Intervention (SFT) Alliance: β=1.34, P=0.04
	Langberg *et al.*, 2018	Yes	ADHD	HOPS; CHIEF	Intervention (HOPS)=111; Intervention (CHIEF)=111; Control=52	HOPS:12.00 (1.05) CHIEF:12.02 (0.99) Control:11.87 (1.12)	72/202	Intervention (HOPS) *vs.* Intervention (CHIEF) d=0.43–0.68
	Sibley *et al.*, 2020	Yes	ADHD	Parent-teen Group; Dyadic treatment	Intervention (Dyadic treatment)=63; Intervention (parent-teen Group)=60	Dyadic treatment: 13.63 (1.49) Parent-teen group:13.59 (1.78)	24/99	Intervention (Dyadic treatment) *vs.* Intervention (parent-teen Group) F=0.06–1.96, Ps>0.05
Externalizing problems	Weiss *et al.*, 2013	No	Conduct problems	MST	Intervention (MST)=84; Control=80	MST:14.6 (1.3) Control: 14.5 (1.4)	28/136	Intervention (MST) *vs.* Control Time×treatment: F=5.19, P<0.05.
	Caldwell *et al.*, 2012	No	Antisocial Behaviors	Specialized intensive treatment program	Intervention=127	16.1 (0.89)	0/127	From pre to post: F=12.48–44.22, Ps<0.00001
	Van Ryzin *et al.*, 2012	No	Antisocial Behaviors	FCU	Intervention=998	16.1 (0.89)	472/526	From pre to post: β=0.30, P<0.05
Autism spectrum disorder	Idris *et al.*, 2022	Yes	Autism spectrum disorder	PEERS®	Intervention (PEERS®)=54; Control=52	Intervention:14.65 (1.51) Control:14.48 (1.62)	73/33	Intervention (PEERS®) *vs.* Control Social Skills Improvement: F=5.37, P=0.02
Substance use	Hendriks *et al.*, 2012	Yes	Substance use	MDFT; CBT	Intervention (MDFT)=55; Intervention (CBT)=54;	MDFT: 16.6 (1.3) CBT: 16.9 (1.2)	22/87	Intervention (MDFT) *vs.* Intervention (CBT) F=0.46–0.55 13–16: β [95% CI]: −25.6 [−44.0, −7.1]; 17–18: β [95%CI]: 16.8 [−2.2, 35.7]
	Lammers *et al.*, 2015	No	Substance use	Coping skills intervention	Intervention=343; Control=356	Interventiont:13.9 (0.98) Control:14.1 (0.77)	335/364	Intervention *vs.* Control OR=0.99–1.05, Ps>0.05
	Lammers *et al.*, 2017	No	Substance use	Coping skills intervention	Intervention=343; Control=356	Intervention:13.9 (0.98) Control:14.1 (0.77)	335/364	Intervention *vs.* Control reducing alcohol use in anxiety sensitivity group: OR=2.14, P=0.03; reducing binge drinking and binge drinking frequency in sensation seeking group: OR=1.76, P=0.04; OR=0.24, P=0.04
	Lindenberg *et al.*, 2022	No	Substance use	PROTECT	Intervention (PROJECT)=167; Control=255	15.11 (2.01)	229/193	Intervention *vs.* Control t=−2.148, P=0.03
	Chaplin *et al.*, 2021	No	Substance use	PM; PE	Intervention (PM)=48; Intervention (PE)=48	PM: 14.00 (1.49) PE: 13.98 (1.69)	47/49	Intervention (PM) *vs.* Intervention (PE) b=−0.02, t=−2.27, SE=0.01, P=0.03
Insomnia	de Bruin *et al.*, 2018	Yes	Insomnia	CBTI	Intervention (Internet group)=39; Intervention (Face to face group)=38; Control=39	15.6 (1.6)	87/29	Intervention (Internet group) *vs.* Control β=0.98, P<0.001 Intervention (face to face group) *vs.* control group β=1.04, P<0.001
	Dong *et al.*, 2020	No	Insomnia	TranS-C	Intervention (TranS-C)=89; Intervention (psychoeducation)=87	14.77 (1.84)	–	Intervention (TranS-C) *vs.* Intervention (psychoeducation) Morningness–Eveningness Preferences: Coef=1.84, P=0.006; Sleep quality: Coef=−1.09, P=0.02
Borderline personality disorder	Jørgensen *et al.*, 2021	Yes	Borderline personality disorder (BPD)	MBT-G	Intervention (MBT)=55; Control=56	15.8 (1.1)	110/1	Intervention (MBT) *vs.* Control difference=−0.6, 95% CI: [−3.9, 2.7], P=0.70
	Schuppert *et al.*, 2012	Yes	Borderline personality disorder (BPD)	ERT	Intervention (ERT)=54; Control=55	15.98 (1.22)	105/4	Intervention *vs.* Control SE=−11.16 to 1.19, P>0.05
Psychosis	She *et al.*, 2016	Yes	Psychosis	Structural group therapy	Intervention=30; Control=30	Intervention: 16.8; Control: 16.6	34/26	Intervention *vs.* Control Self-consistency: t=6.100, P<0.001; Positive symptom: t=2.271, P<0.05
	Poulton *et al.*, 2014	No	Psychosis	MTFC	Intervention (MTFC)=81; control=85	15.3 (1.17)	166/0	Intervention *vs.* Control Coef=−2.05, P<0.05
Mental health	Schleider *et al.*, 2016	No	Mental health	The single-session growth mindset intervention	Intervention=48; Control=48	13.32 (1.14)	53/43	Intervention *vs.* Control Mindsets: Cohen's d=0.89, 95%CI: [0.53, 1.82]; Perceived control: Cohen's d=0.36, 95% CI: [0.17, 0.52]; Social stress recovery slope: Cohen's d=0.48; 95% CI: [0.05, 0.90]
	Schleider *et al.*, 2018	No	Mental health	The single-session growth mindset intervention	Intervention=48; Control=48	13.32 (1.14)	53/43	Intervention *vs.* Control Youth reported depression: B=1.02; P=0.03; Youth reported perceived primary control: B=1.24; P=0.047
	Osborn *et al.*, 2020	No	Mental health	"Shamiri" group intervention	Intervention=28; Control=23	Intervention: 15.36 (0.95) Control: 16.09 (1.04)	31/20	Intervention *vs.* Control Depression: Cohen's d [95% CI]: 0.32 [−0.34, 0.99] Anxiety: Cohen's d [95% CI]: 0.54 [−0.20, 1.29]
	Johnson *et al.*, 2016	No	Mental health	School-based mindfulness program	Intervention=132; Control=176	13.63 (0.43)	147/161	Intervention *vs.* Control Cohen's d=0.01 to 0.28, Ps>0.05
	Bluth *et al.*, 2015	No	Mental health	Mindfulness intervention	Intervention=28	–	16/12	From pre to post t=−1.85 to −2.29, effect size=0.33 to 0.40, Ps<0.05
	Bluth *et al.*, 2017	No	Mental health	Mindful self-compassion intervention	Intervention=47	–	24/23	From pre to post Stress: Cohen's d [95% CI]: 0.36 [0.10, 0.62]; Resilience: Cohen's d [95% CI]: −0.03 [−0.21, 0.16]; Curiosity: Cohen's d [95% CI]: −0.25 [−0.49, 0]
	Bei *et al.*, 2013	No	Mental health	Mindfulness-based, multi-component group sleep intervention	Intervention=10	–	10/0	From pre to post: Sleep quality: Cohen's d [90% CI]: 0.51 [0.16, 0.86]
	Bierman *et al.*, 2021	No	Mental health	The enrichment program	Intervention=192; Control=164	–	192/164	Intervention *vs.* Control Conduct problem: estimate=−0.43, P<0.05; Emotional symptoms: estimate=−0.53, P<0.01
	Shoshani *et al.*, 2014	No	Mental health	Positive psychology school-based intervention	Intervention=537; Control=501	Intervention: 13.61 (0.61) Control:13.75 (0.66)	525/513	Participants in the Intervention group exhibited significantly decrease in contrast to significantly increase in distress, anxiety, and depression symptoms
	Manicavasagar *et al.*, 2014	No	Mental health	The positive psychology program	Intervention=62; Control=92	15.4 (1.7)	104/50	Intervention *vs.* Control Depression: z=−2.44, P=0.02, r=−0.22; Stress: z=−2.14, P=0.03, r=−0.21; Well-being: z=2.07, P=0.04, r=0.19

CBM-I, cognitive bias modification for interpretation biases intervention; PIM, placebo interpretation modification; CBM, cognitive bias modification; CBT, cognitive behavioral theropy; ASAP-Y, anxiety sensitivity amelioration program for youth; ABMT, attention bias modification treatment; CBP, cognitive-behavioral program; OVK, Op Volle Kracht; FBT, family-based treatment; SyFT, systemic family therapy; IPC, intensive parental coaching; FTFM, family therapy with family meal; AFT, individual adolescent supportive psychotherapy; MFT-AN, multi-family therapy for anorexia nervosa, FT-AN, single family therapy for anorexia nervosa; BMI, body mass index; SUCCEAT, supporting carers of children and adolescents with eating disorders in Austria; TAU, treat as usual; CRT, cognitive remediation therapy; ADHD, attention deficit hyperactivity disorder; PML, planning-focused treatment, SFT, solution-focused treatment; HOPS, homework, organization, and planning Skills intervention, CHIEF, the completing homework by improving efficiency and focus; MST, multisystemic therapy; FCU, the family check-up; PEERS®, The Program for the Education and Enrichment of Relational Skills; MDFT, multidimensional family therapy; PROTECT, Professioneller Umgang mit technischen Medien; PM, parenting-focused mindfulness intervention, PE, parent education intervention; CBTI, cognitive behavioral therapy for insomnia; TranS-C, Trans-diagnostic Sleep and Circadian Intervention; MBT-G, mentalization-based treatment in groups; ERT, emotion regulation training; MTFC, multidimensional treatment foster care.