

Table 1: The characteristics of studies that were included in this review.

No.	Study	Country	Medical condition	"Intervention contents"	"Intervention conditions"	"Intervention intensity (minutes)"	Intervention duration (weeks)	Control	"N Total"	"N Int."	"N Cont."	"Measurements occasion (Months)"	W(%)	Mean age (SD)	Including the meta-analysis	Outcome measures	Kinds of outcome
1	"Thompson et al. (2012)" [12]	U.S.	IBS	CBT	Individuals	540	14	TAU	41	22	19	"Pre Post Follow(6)"	21(51.22)	14.99(2.01)	"Y (Only Post)"	"CDI(P) KSADS"	"Dep(P) Dep(C)"
2	"Chadi et al. (2016)" [13]	Canada	chronic pain	"MBI (mindfulness)"	Group	720	8	WL	29	10	9	"pre intervention (week1,8,11,18) post follow (intervention+8week)"	19(100)	15.8(1.1)	N	BYI-2(dep)	Anx(C)
3	"Freedenberg et al. (2017)" [14]	U.S.	heart disease	"MBSR (psycho-educational program)"	Group	540	6	AC	46	26	20	"pre post"	29(63)	14.8(1.7)	"Y (Only Post)"	"HADS (dep/anx)"	"Dep(C), Anx(C)"
4	"Scholten et al. (2013)" [15]	Netherlands	CI	CBT	Group	540	24	WL	194	"71(child) 49(parent-child)"	74	"pre follow (intervention+6,12)"	NA(50)	12.0(NA)	Y	"CBCL(P/C) internalizing problem"	"Int(P) Int(C)"
5	"Law et al. (2015)" [16]	U.S.	pediatric headache	Internet CBT	Individuals	540	8	TAU	83	44	39	"pre post follow (intervention+3)"	68(81.9)	14.5(1.7)	Y	"RCMAS-2 CDI"	"Anx(C) Dep(C)"
6	"Palermo et al. (2009)" [17]	U.S.	chronic pain	CBT	Web	540	8	TAU	48	26	22	"pre post follow (intervention+3)"	35(72.9)	14.8(2.0)	Y	RCADS(dep)	Dep(C)
7	"Hickman et al. (2014)" [18]	U.S.	CDHs	"COPE-HEP (cognitive theory based)"	NA	260	7	AC	36	16	16	"pre post"	23(63.9)	13.4(NA)	"Y (Only Post)"	"BYI-2 (dep/anx)"	"Dep(C) Anx(C)"
8	"Lizasoain & Polaino (1995)" [19]	Spain	physical illness	psychopedagogical programme	NA	NA	NA	TAU	40	20	20	NA	20(50)	NA(NA)	N	STAIC	Anx(C)
9	"Phipps et al. (2012)" [20]	U.S.	SCT	health-promotion intervention	Individuals	NA	24	TAU	NA	NA	NA	"pre follow (intervention+6)"	NA(59.1)	12.8(3.9)	"Y (Only Post)"	CDI	Dep(C)
10	"Johnson et al. (1987)" [21]	U.S.	CI	fantasy intervention	NA	NA	NA	AC	26	13	13	"pre post"	NA(NA)	7.2(NA)	N	STAIC	Anx(C)
11	"Coskunturk & Gozen (2017)" [22]	Turkey	congenital heart disease	"TTPPE (preoperative education)"	Individuals	NA	1	TAU	43	23	20	"pre post"	24(55.8)	NA(NA)	"Y (Only Post)"	"STAIC BAI"	"Anx(C), Anx(C)"
12	"Tahmasebi et al. (2017)" [23]	Iran	"cancer (undergoing chemotherapy)"	Art therapy	Group	300	NA	TAU	65	32	33	"pre post"	NA(NA)	NA(NA)	"Y (Only Post)"	CDI	Dep(C)
13	"Minooei et al. (2016)" [24]	Iran	CRF	empowerment program	Group	450	4	WL	68	34	34	"pre follow (intervention+1)"	NA(58.8)	10.4(NA)	"Y (Only Post)"	QoL	QoL_(C)
14	"Kashikar-Zuck et al. (2012)" [25]	U.S.	juvenile FMS	CBT	Individuals	360	8	AC	114	57	57	"pre post follow(post+6)"	105(92.1)	15.0(1.8)	Y	"CDI PedsQL(social functioning)"	"Dep(C) QoL(C)"
15	"Bahrami, et al. (2019)" [26]	Iran	chronic kidney problems	supportive training program	Group	250	NA	AC	56	28	28	"pre post follow(post+1)"	NA	NA(NA)	N	FAS	Anx(C)
16	"Christie, et al. (2016)" [27]	U.K.	T1D	"CASCADE (a structured educational intervention)"	Group	NA	16	TAU	327	159	168	"pre follow(12,24)"	181(55)	13.1(NA)	N	PedsQL(psychosocial)	QoL_(C)
17	"Moghanloo, et al. (2015)" [28]	Iran	"Diabetes (T1,T2)"	ACT	Group	900	10	NI	34	17	17	"pre post"	17(50)	34(NA)	"Y (Only Post)"	"RCDS SWLS"	"Dep(C) QoL(C)"
18	"Rubén et al. (2019)" [29]	Spain	FAP	"DARWeb (web-based intervention; CBT)"	Individuals	NA	11	WL	61	25	36	"pre post"	33(54)	11.1(NA)	"Y (Only Post)"	"CDI PedsQL(C/P)"	"Dep(C) QoL(C) QoL(P)"

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19	"Kashikar-Zuck et al. (2005)" [30]	U.S.	JPFM	CST	Individuals	NA	8	AC	30	15	15	"pre post follow(8)"	30(100)	15.83(1.26)	N	CDI	Dep(C)
20	"Mayer-Davis et al. (2018)" [31]	U.S.	T1D	"FLEX (adaptive behavioral intervention)"	Individuals	NA	72	TAU	258	130	128	"pre post"	128(50)	14.9(1.1)	"Y (Only Post)"	"CES-D PedsQL(generic core) (C/P)"	"Dep(C) QoL(C) QoL(P)"
21	"Rizou et al. (2017)" [4]	Greece	epilepsy	psycho-educational intervention	Group	240	12	WL	24	12	12	"pre post"	16(67)	13.6(NA)	"Y (Only Post)"	"RCADS (total psychological distress score)"	Int(C)
22	"Warner et al. (2006)" [32]	NA	Asthma	written emotional disclosure	Individuals	60	8	AC	50	28	22	"pre follow(2)"	29(58)	NA(NA)	N	CBCL(C/P)_internalizing problem	"Int(C) Int(P)"
23	"Perrin et al. (1992)" [33]	NA	Asthma	education+stress management	NA	480	4	WL	56	29	27	"pre post"	21(38)	9.3(NA)	N	CBCL(P)_internalizing problem	Int(P)
24	"Chadi et al. (2019)" [34]	NA	CI	"MARS-A (MBI)"	Group	720	8	AC	18	9	9	"pre post follow(2)"	7(78)	15.3(NA)	N	DASS-21	Int(C)
25	"Stinson et al. (2020)" [35]	Canada	JIA	"Teens Taking Charge (web-based self-management intervention)"	Individuals	NA	12	AC	219	88	131	"pre post follow(3, 9)"	154(70.3)	14.4(1.6)	Y	"PROMIS (anx/dep)"	"Dep(C) Anx(C)"
26	"Malboeuf-Hurtubise et al. (2016)" [36]	Canada	cancer	MBIs	Group	720	8	WL	16	9	7	"pre post follow(6)"	NA	NA	Y	"BYI(anx/dep) PANAS-C(negative) PCQL"	"Dep(C) Anx(C) QoLe"
27	"Hood et al. (2018)" [37]	U.S.	T1D	PRP T1D	Group	810-1080	4.5	AC	264	133	131	"pre post follow(2,5,4)"	NA	15.7(1.1)	Y	CDI	Dep(C)
28	"Ketchen et al. (2006)" [38]	NA	SCD	Web-based psychoeducation program	self-help	NA	8	WL	37	20	17	"pre post"	48.6	NA	N	"PedsQL(P) CDI"	"Dep(C) QoL(P)"
29	"Bignall et al. (2015)" [49]	U.S.	Asthma	relaxation/ breathing- retraining	NA	30	4	AC	33	15	18	"pre post"	NA	15.47(1.25)	"Y (Only Post)"	"PedsQL(Asthma) STAI-T"	"QoL(C) Anx(C)"
30	"Minoocci et al. (2016)" [40]	NA	CRF	empowerment program	Group/TEL	315	NA	WL	64	34	34	"pre post"	43.8	NA	N	PedsQL(psychosocial) (C/P)	"QoL(C) QoL(P)"
31	"Marshall et al. (2018)" [41]	U.S.	Asthma	I Can Cope	school-based	300	10-18	"AC WL"	104	35	"AC34 NI35"	"pre post"	53.8	NA	"Y (Only Post)"	"PSS-10 CDI STAIC"	"Dep(C) Anx(C)"
32	"Kuttner et al. (2006)" [42]	NA	IBS	yoga	NA	NA	4	WL	28	14	14	"pre post"	71.4	14.15(1.95)	"Y (Only Post)"	"RCMAS CDI-SF"	"Anx(C) Dep(C)"
33	"Beebe et al. (2010)" [43]	U.S.	Asthma	active art therapy	NA	420	7	WL	22	NA	NA	"pre post follow(6)"	NA	NA	N	"PedsQL BYI"	"Anx(C) QoL(C)"
34	"Mano et al. (2013)" [44]	U.S.	chronic pain	MBSR	Group	NA	NA	AC	32	26	6	"pre post follow(1,3)"	NA	NA	N	"STAIC(trait) PedsQL_total"	"Anx(C) QoL(C)"
35	"Stinson et al. (2010)" [45]	Canada	JIA	Teens Taking Charge: Managing Arthritis Online	web	436.9	12	AC	48	22	24	"pre post"	64.6	14.6(1.48)	N	NA	NA
36	"Tsai et al. (2013)" [46]	" Taiwan"	young brain tumor	therapeutic play	Individuals	NA	12	WL	19	9	10	"pre post"	26.3	NA	"Y (Only Post)"	BAI-Y	Anx(C)
37	"Grootenhuys et al. (2009)" [47]	Netherlands	IBD	Op Koers (OK program)	Group	NA	NA	WL	40	22	18	"pre post follow(6-9)"	52.5	NA	"Y (Only Post)"	"ZBV-K DUX-25_total CBCL(P)"	"Anx(C) QoL(C) Int(P)"
38	"Newcombe et al. (2012)" [48]	" Australia"	Chronic respiratory illnesses	BEO	web	NA	9	WL	39	19	20	"pre post"	51.3	13.58(1.92)	"Y (Only Post)"	CES-DC	Dep(C)

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39	"Brown et al. (2019)" [49]	Canada	CWE	PA behavior-change counseling	Individuals	360	24	AC	115	56	59	"pre post follow(12)"	50.4	11.37(1.91)	N	"CHEQOL KIDSCREEN-27 CDI-SF"	"QoL(C) Dep(C)"
40	"Nestadt et al. (2019)" [50]	Thailand	PHIV	CHAMP+	Group	NA	24	TAU	88	45	43	"pre post follow(3)"	48.9	12.3(1.4)	N	CDI	Dep(C)
41	"Jaser et al. (2014)" [51]	NA	T1D	PA	Individuals	NA	8	AC	39	20	19	"pre post follow(3,6)"	51.3	NA	N	CDI	Dep(C)
42	"Lee et al. (2021)" [52]	NA	CD	CH	Individuals	NA	8	WL	40	20	20	"pre post"	50	15.8 (NA)	N	"MCS P-SF(anx/dep) PedsQL(emotional)(P)"	"QoL(C) Anx(C) Dep(C) QoL(P)"
43	"Chiang et al. (2009)" [53]	Taiwan	asthma	Self-management program Relaxation-breathing training	Individuals	NA	12	AC	48	22	26	"pre post"	37.5	NA	"Y (Only Post)"	CCAS	Anx(C)
44	"Doust et al. (2020)" [54]	" Iran"	cancer	spiritual care sessions	Group	NA	4	AC	40	20	20	"pre post"	NA	NA	"Y (Only Post)"	MASC	Anx(C)
45	"Moazzezi et al. (2015)" [55]	" Iran"	DM	ACT	NA	NA	10	"NI "	40	20	20	"pre post"	30.56	NA	"Y (Only Post)"	"SHSE PSS"	QoL(C)
46	"Xie et al. (2020)" [56]	China	AD	IBMS group intervention	Group	NA	6	WL	113	58	55	"pre post follow(1,1)"	46.9	8.6(1.94)	Y	SCAS	Anx(C)
47	"Mak et al. (2018)" [57]	" Australia"	CP	"MiYoga (mindfulness-based movement programme)"	Group	"lecture: 540 two telephone or Skype consultations practice at home: 1120"	8	WL	42	21	21	"pre post"	NA	NA	"Y (Only Post)"	"CP-QOL (emotional well-being and self-esteem)(P)"	QoL(P)
48	"Shelley et al. (2013)" [58]	Netherlands	FAP	CBT	Individuals	NA	Int + 2	AC	104	52	52	"pre post follow(6,12)"	72.1	NA	N	"Shortened RCADS KIDSCREEN-27(Psychological well-being)"	"Int(C) QoL(C)"
49	"Kashikar-Zuck et al. (2018)" [59]	U.S	JFM	"FIT Teens CBT neuromuscular exercise training)"	Group	NA	8	AC	40	20	20	"pre post follow(3)"	90	15.38(1.53)	Y	CDI	Dep(C)

Notes. AC=attention control condition ; AD = atopic dermatitis ; BAI=the Beck Anxiety Inventory ; BEO=Breathe Easier Online ; BYI-2=the Beck Youth Depression and Anxiety Scales 2nd ; CASCADE=the Child and Adolescent Structured Competencies Approach to Diabetes Education ; CHAMP = the Collaborative HIV Prevention and Adolescent Mental Health Program ; CBCL=Children Behavior Checklist ; CBT = cognitive behavioral therapy ; CD = Crohn's disease ; CDHs=chronic daily headaches ; CDI =the children's depression inventory evaluated by children and adolescents ; CDI(P) = children's depression inventory evaluated by parents ; CES-D=the Centers for Epidemiologic Study -Depression Scale ; CG = care giver ; CH = Clinical Hypnosis ; CI=chronic illnesses ; CP = cerebral palsy ; CP QOL = Cerebral Palsy Quality of Life Questionnaire ; CRF=chronic renal failure ; CST=coping skills training ; CWE = children with epilepsy ; DASS-21=the depression Anxiety Stress Scale ; DM = Diabetes Mellitus ; ERC = the Emotion Regulation Checklist ; FAP = functional abdominal pain ; FAS=the Faces Anxiety Scale ; FIT Teens = Fibromyalgia Integrative Training for Teens ; FLEX=the Flexible Lifestyles Empowering Change ; FMS=fibromyalgia syndrome ; HADS=Hospital Anxiety and Depression Scale ; IBD=Inflammatory bowel disease ; IBS = irritable bowel syndrome ; IBMS group intervention =Integrative Body-Mind-Spirit group intervention ; IMC = intensive medical care ; ITPEP=Interactive Play Education Program ; JFM = juvenile fibromyalgia ; JIA=Juvenile idiopathic arthritis ; JPFM=juvenile primary fibromyalgia syndrome ; KSADS = Kiddie-schedule for affective disorders and schizophrenia for school-age children, present and lifetime version ; MASC = the Multidimensional Anxiety Scale for Children ; MARS-A=Mindful Awareness and Resilience Skills for Adolescents ; MBI=mindfulness-based intervention ; MBSR=mindfulness-based stress reduction ; NA = Not Applicable ; NI = non intervention ; PA = Positive affect intervention ; PA behavior-change counseling = physical activity behavior-change counseling ; PANAS-C = the 30 item Positive and Negative Affect Schedule for Children ; PedsQL=the Pediatric Quality of Life Inventory ; PRP T1D=the Penn Resilience Program for type 1 diabetes ; PROMIS=Patient Reported Outcomes Measurement Information System ; PSS = the perceived stress scale ; QoL=Quality of Life ; PHIV = perinatal transmission of HIV ; RCADS=the Revised Child Anxiety and Depression Scale ; RCDS=Reynold's Child Depression Scale ; RCMAS-2=the Revised Children's Manifest Anxiety Scale, Second edition ; SCAS = the Spence Children's Anxiety Scale ; SCT=stem cell transplant ; Shortened RCADS = shortened version of the Revised Child Anxiety and Depression Scale ; SHSE = the special health self-efficacy scale ; SOC = standard of care ; STAIC=State-Trait Anxiety Inventory for Children ; SWLS=Satisfaction With Life Scale ; T1D=type 1 diabetes ; TAU = treatment as usual ; W=woman ; WL=wait-list control group.