

Appendix 2. Characteristics of included studies (N = 78).

Study ID (Author / year / reference)	N	Study arms	Implementation in mental health care	Age – M (SD)	Sex (% of females)	Depression Diagnosis	Applied technologies	Interventions' duration (in weeks) and planned number of modules / sessions	Therapeutic rationale of TBIs
Agyapong (2017) [22]	73	1) Supportive text messages 2) control text messages	Stand-alone intervention	ND	68.5	MDD	Internet application on mobile phone	13,05 weeks / two text messages per day for 90 days	CBT
Andersson (2013) [23]	69	1) Internet-based cognitive behavioral therapy 2) in-person group cognitive behavioral therapy	Stand-alone intervention	42.3 (13.5)	78.3	MDD (71.0% in recurrent episode, 1.5% in single episode, Dysthymia (6.0%), MDD plus dysthymia 21.7%)	Internet-delivered text modules	8 weeks / 7 modules	CBT
Arjadi (2018) [24]	313	1) Internet-based behavioral activation intervention 2) Online psychoeducation	Stand-alone intervention	ND	80.8	MDD (mild (24.2%), moderate (31.2%), severe 40.90%, based on PHQ-9)	Online program (accessible via computer or mobile device) + telephone support	ND / 8 modules	BA
Berger (2011)* [25]	76	1) Guided internet-based CBT 2) unguided internet-based CBT 3) waiting list	Stand-alone intervention	38.8 (14.0)	69.7	MDD, Dysthymia (9.2%); MDD severity (mild (22.4%), moderate (60.5%), severe (7.9%), based on BDI-II scores)	1), 2) Online intervention	10 weeks / 11 modules	1), 2) CBT

Berger (2018) [26]	98	1) regular f2f psychotherapy plus internet-based CBT (Deprexis) 2) regular f2f psychotherapy	Blended treatment	43.1 (12.0)	66.3	(ICD-10; F32.- Depressive Episode, F33.- Recurrent Depressive Disorder, F34.- Persistent Affective Disorder, F38.- Other Affective Disorder, F39 Unspecified Affective Disorder)	Online program	12 weeks (length of Deprexis) / ND	CBT
Blackwell (2015) [27]	150	1) imagery cognitive bias modification 2) control condition (without training contingency, which was provided for other intervention arm)	Stand-alone intervention	ND	68.7	MDD	Online program (access via web browser)	4 weeks / 12 sessions	CBM
Bowers (1993) [28]	22	1) TAU 2) TAU plus therapist delivered CBT 3) TAU plus computer assisted CBT	Blended treatment	ND	68.2	MDD	3) Computer program	ND / 8 sessions	CBT
Carlbring (2013) [29]	80	1) Computer-administered therapy 2) waiting list	Stand-alone intervention	44.5 (13.5)	82.5	MDD	1) Online intervention, CD-ROM (mindfulness and acceptance instructions exercises)	8 weeks / 7 modules	1) BA with influences from acceptance and commitment therapy
Celano (2017) [30]	65	1) Positive psychology 2) cognition focused condition	Enhanced stand-alone intervention	ND	69.2	MDD	Telephone	6 weeks / 6 sessions	PP, CF (cognition focused emotionally neutral memory recall)
Choi (2012) [31]	63	1) Internet-based CBT (attuned to Chinese people	Stand-alone intervention	39.0 (11.7)	80	MDD	1) Online intervention, telephone (for	8 weeks / 6 online	1) CBT

		with depression living in Australia) 2) waiting list					supporting contacts)		
Choi (2014) [32]	158	1) Videoconferencing problem solving therapy, 2) face-to-face problem solving therapy 3) telephone support calls	Stand-alone intervention	64.8 (9.2)	78.5	MDD (65.2%), depressive disorder, NOS (29.7%), dysthymia (5.1%)	1) Laptop (Skype), 3) telephone	ND / 6 sessions	1) Problem solving therapy, 3) no specific rationale applied
Corruble (2016) [33]	221	1) Social rhythm therapy plus face-to-face treatment with a psychiatrist and antidepressant medication 2) clinical management plus face-to-face treatment with a psychiatrist and antidepressant medication 3) TAU (posteriori matched control group)	Blended treatment	ND	ND	MDD	1), 2) Telephone	1) 8 weeks / 8 sessions, 2) 8 weeks / ND	1) Social rhythm therapy, 2) Intensive clinical management (as described in the paper)
Dennis (2020) [35]	241	1) Telephone interpersonal psychotherapy + locally available standard postpartum care (including postpartum depression service), 2) locally available standard postpartum care	Enhanced stand-alone intervention	ND	100	MDD (postpartum)	1) Telephone-delivered	12 weeks / 12 modules	1) IPT

		(including postpartum depression service)							
Egede (2015) [36]	241	1) Videoconferencing behavioral activation treatment 2) face-to-face behavioral activation treatment	Stand-alone intervention	63.9 (5.1)	2	MDD	1) Videophone	8 weeks / 8 sessions	2) Behavioral activation
Flygare (2020) [37]	95	1) Internet-based CBT, 2) online psychoeducation control condition	Stand-alone intervention	45.30 (12.20)	75.80	MDD (71.6%), dysthymia (9.5%), Depressive Disorder NOS (4.2%), MDD in partial remission (15.8%)	1) Online intervention	8 weeks / 8 modules	1) CBT
Forand (2018) [38]	90	1) Internet-based CBT 2) waiting list	Stand-alone intervention	ND	75	MDD (98%)	1) Online Intervention, telephone (contacts with coaches)	8 weeks / 8 sessions	1) CBT
Forsell (2017) [39]	42	1) Internet-based CBT plus antenatal TAU 2) antenatal TAU	Enhanced stand-alone intervention	ND	100	MDD	Online platform	10 weeks / 10 modules	CBT
Gilbody (2015)* [40]	691	1) Internet-based CBT (Beating the Blues) plus usual GP care 2) internet-based CBT (MoodGYM) plus usual GP care) 3) usual GP care	Enhanced stand-alone intervention	39.9 (12.7)	67	MDD (81%)	1), 2) Online intervention, telephone (for technical support)	1) ND / 8 sessions, 2) ND / 5 sessions	1), 2)

Gili (2020) [41]	221	1) Online healthy lifestyle program, 2) online mindfulness program, 3) online positive affect promotion, 4) improved TAU	Enhanced stand-alone intervention	ND	77.8	MDD or dysthymia	1) & 2), Online intervention	4 to 8 weeks / 4 modules	1) Mindfulness, 2) Positive affect promotion
Graaf (2009)* [34]	303	1) Internet-based CBT plus TAU 2) internet-based CBT 3) TAU	1)Enhanced stand-alone intervention 2) stand-alone intervention	ND	56.8	Recurrent MDD (36.30%), single MDD (43.6%)	1), 2) Online intervention	1), 2) ND / 9 sessions	1), 2) CBT
Hunkeler (2012) [43]	103	1) Collaborative care website plus usual specialty mental health care 2) usual specialty mental health care	Collaborative care approach	ND	79.6	Recurrent MDD	1) Online platform	52 weeks / ND	CBT
Hur (2018) [44]	48	1) App-based cognitive restructuring, 2) App-based mood chart control group	Stand-alone intervention	ND	88.2	Other specified depressive disorder	1) Online intervention	3 weeks / ND	1) CT (especially cognitive restructuring)
Jannati (2020) [45]	78	1) App-based CBT, 2) waiting list	Stand-alone intervention	ND	100	MDD (postpartum)	1) Online intervention	8 weeks / 8 modules	1) CBT

Johansson (2012a) [48]	92	1) Internet-based psychodynamic treatment 2) structured support control group	Stand-alone intervention	45.6 (14.0)	75	Acute MDD (65.2%), partial remitted MDD (34.8%)	1) Online intervention	10 weeks / 9 modules	Psychodynamic therapy
Johansson (2012b)* [49]	121	1) Tailored internet-based CBT 2) standardized internet-based CBT 3) participation in online discussion group during waiting period	Stand-alone intervention	44.7 (12.1)	71.1	Acute MDD (73.6%), partial remitted MDD (26.4%), dysthymia (14.0%)	1), 2) Online Intervention	1) 10 weeks / 25 chapters, 2) 10 weeks / 8 chapters	1), 2) CBT
Johansson (2013) [47]	100	1) Internet-based psychodynamic treatment 2) waiting list plus continuous contact with therapist	Stand-alone intervention	ND	ND	Depression and anxiety disorders, data are reported separately for the depressed subgroup (MDD)	1) Online intervention 2) online contact to therapist	1) 10 weeks / 8 modules, 2) ND / ND	1) Psychodynamic therapy, 2) basic support from therapists
Johansson (2019) [46]	54	1) Internet-based CBT, 2) waiting list	Stand-alone intervention	ND	57.0	Recurrent MDD (94%)	1) Online intervention	8 weeks / 8 modules	1) CBT
Kessler (2009)[50]	297	1) Online CBT plus usual GP care 2) usual GP care while on waitlist	Enhanced stand-alone intervention	ND	68.0	MDD (mild (5.1%), moderate (26.2%), severe (68.7%), based on BDI score)	Online intervention (with a therapist online in real time)	16 weeks / 10 sessions	CBT

Kivi (2014) [51]	92	1) Internet-based CBT 2) TAU	Stand-alone intervention	36.6 (11.3)	66	MDD (mild (19%), moderate (34%), severe (41%), based on BDI-II cut-off scores)	Online program, CD (containing mindfulness and acceptance instructions), telephone (contact to coach)	12 weeks / 7 modules	CBT (consisting of BA, Acceptance and Commitment Therapy, and Mindfulness)
Kooistra (2019) [52]	103	1) Blended CBT, 2) f2f CBT	Blended treatment	ND	63.0	MDD	1) Online intervention	10 weeks / 10 f2f sessions and 9 web-based sessions	1) CBT
Hirsch* (2018) [42]	79	1) Online Cognitive Bias Modification with or, 2) without priming of repetitive negative thinking 3) Neutral task control condition	Stand-alone intervention	ND	78.5	GAD or MDD (outcome data was reported separately)	Online platform	3 weeks / 10 sessions	CBM
Lam (2013) [53]	105	1) Telephone CBT plus medication, 2) medication plus adherence reminder	Blended treatment	ND	54.6	Single MDD (33.33%), recurrent MDD (66.66%)	1) Telephone	8 to 10 weeks CBT; 12 weeks escitalopram / 8 sessions of CBT	CBT
Lang (2012) [54]	28	1) Imagery-focused cognitive Bias modification, 2) Control condition with same stimulus material, but with modified contingencies	Stand-alone intervention	ND	76.9	MDD	Computer program	1 weeks / 7 sessions	Imagery-focused CBM

Lappalainen (2015) [55]	39	1) Internet-based acceptance and commitment therapy 2) waiting list	Stand-alone intervention	51.9 (12.9)	71.8	MDD (mild (25.6%), moderate (43.6%), severe (17.9%), based on BDI-II scores)	Online intervention	7 weeks / 6 modules	Acceptance and commitment therapy
Lindner (2014) [56]	38	1) Self-help program plus telephone support by therapist 2) Self-help program plus e-mail support by therapist	Stand-alone intervention	ND	84.2	MDD (84.2%), MDD + Dysthymia (15.8%)	1) Online program, telephone (contact to therapist), CD-ROM (with mindfulness and acceptance instructions) 2) Online program, e-mail (contact to therapist), CD-ROM (with mindfulness and acceptance instructions)	8 weeks / 7 modules	BA (with some influence from acceptance and commitment therapy)
Löbner (2018) [57]	647	1) Online CBT plus TAU 2) TAU	Enhanced stand-alone intervention	ND	68.5	MDD	Online program	ND / 5 modules	CBT
Luxton (2016) [58]	121	1) In Home treatment 2) in-person treatment	Stand-alone intervention	ND	18.2	MDD (9% suffered from minor depression)	1) Videoconferencing via laptop	8 weeks / 8 sessions	BA
Ly (2014) [60]	84	1) Smartphone-based BA intervention 2) smartphone-based mindfulness intervention	Stand-alone intervention	36.1 (10.8)	70	MDD, MDD and Dysthymia (49%)	1) Smartphone application 2) smartphone application	8 weeks / 3 chapters	1) BA, 2) Mindfulness practice programme

Ly (2015) [59]	93	1) Blended treatment (face-to-session plus smartphone application that were used between the sessions) 2) Face-to-face BA	Blended treatment	30.6 (11.4)	69.9	MDD	1) Smartphone application	1) 9 weeks / 4 face-to-face sessions (smartphone app was used between sessions), 2) 10 weeks / 10 sessions	1), 2) BA
Mantani (2017) [61]	164	1) Smartphone CBT plus medication change 2) medication change alone	Blended treatment	ND	53.1	MDD (with antidepressant resistance defined as scoring ≥ 10 on the BDI-II)	1) Smartphone application	9 weeks / 8 sessions	CBT
Meyer (2015) [62]	163	1) Internet-based CBT plus permission of using TAU, 2) TAU	Enhanced stand-alone intervention	42.0 (11.4)	74.8	MDD (37.2%), Dysthymia (10.4%), MDD and Dysthymia (39.3%), Neither MDD nor Dysthymia (12.9%)	1) Online intervention plus daily text messages (optionally)	13,05 weeks / ND	CBT
Milgrom (2016) [63]	43	1) Internet-based CBT 2) TAU	Stand-alone intervention	ND	100	Recurrent MDD (67.4%), single MDD (32.3%)	1) Online intervention	8 weeks / 6 sessions	CBT
Mohr (2011) [64]	85	1) Telephone CBT 2) TAU	Stand-alone intervention	55.9 (10.6)	9.4	MDD	1) Telephone	20 weeks / 16 sessions	CBT

Mohr (2012) [66]	325	1) Face-to-face CBT 2) Telephone CBT	Stand-alone intervention	ND	77.5	MDD	2) Telephone administered intervention	18 weeks / 18 sessions	CBT
Mohr* (2013) [65]	102	1) Guided internet-based CBT 2) unguided internet-based CBT 3) waiting list	Enhanced stand-alone intervention	ND	71.4	MDD	1) Online intervention, telephone (contact to coach) 2) online intervention	1), 2) 12 weeks / 18 lessons	1), 2) CBT
Mohr (2019) [67]	312	1) Stepped care program (1st step iCBT, 2nd step telephone CBT), 2) telephone CBT alone	Stepped care approach	ND	73.4	MDD	1) Online intervention, 2) telephone-delivered intervention	1) & 2), duration of the treatment depended on treatment success, but treatment lasted up to a maximum of 20 weeks	1) & 2), CBT
Montero-Marín* (2016) [68]	296	1) Self-guided online program plus improved TAU 2) therapist-guided online program plus improved TAU 3) improved TAU	Blended treatment	43.2 (9.3)	79.2	MDD	1) Online intervention 2) online intervention	1), 2): 13,05 weeks (estimated) / 10 module	1), 2) CBT
Nakao (2018) [69]	40	1) Blended CBT plus continuation with TAU with their treating psychiatrist 2) waiting list and continuation with TAU with their treating psychiatrist	Blended treatment	40.2 (9.7)	50	MDD	1) Online program	12 weeks / 5 core components	CBT

Nyström (2017)* [70]	312	1) Physical activity without rationale 2) physical activity with rationale, 3) BA based on Lewinsohn's model 4) BA based on Martell's model, 5) waiting list	Stand-alone intervention	42.0 (13.5)	76	MDD	3)-4) Online intervention	3)-4) 12 weeks / 8 sessions	3)-4) BA
Oehler (2020) [71]	348	1) Internet-based CBT, 2) progressive muscle relaxation control group	Stand-alone intervention	ND	78.7	Recurrent MDD (92.51%), single MDD (1.72%), dysthymia (23.92%)	1) Online intervention	6 weeks / 6 modules	1) CBT
O'Mahen (2014) [72]	83	1) BA 2) TAU	Stand-alone intervention	ND	100	MDD	1) Online treatment, telephone (support)	ND / 12 sessions	BA
Perini (2009) [73]	48	1) Online CBT 2) waiting list	Stand-alone intervention	49.3 (12.1)	77.8	MDD	1) Online intervention	8 weeks / 6 sessions	CBT
Pfeiffer (2020) [74]	330	1) Peer-supported cCBT, 2) enhanced usual care	Enhanced stand-alone intervention	51.6 (14.9)	20.0	MDD	1) Online intervention	13 weeks / 8 modules	1) CBT
Pihlaja (2020) [75]	100	1) iCBT plus add-on telephone support, 2) iCBT only	Stand-alone intervention	63.11 (11.10)	66.00	MDD	1) & 2), Online intervention	ND / 7 modules	1) & 2), CBT
Reins (2019) [76]	131	1) Internet-based CBT 2) online psychoeducation	Stand-alone intervention	41.6 (10.8)	75.6	MDD	1) Online intervention	ND / 6 sessions	CBT
Ren (2016) [77]	62	1) Internet-based CBT 2) waiting list	Stand-alone intervention	ND	ND	MDD	1) Online intervention	3 weeks / 5 sessions	CBT
Richards (2013) [79]	581	1) Collaborative care intervention plus TAU 2) TAU	Collaborative care approach	44.8 (13.3)	71.9	MDD (mild (14.3%), moderate (55.6%), severe (29.9%), based on ICD-10 diagnosis)	1) Telephone	14 weeks / 6 to 12 contacts	BA

Richards (2020) [78]	169	1) Immediate iCBT (step 2 within a stepped care approach), 2) waiting list	Stepped care approach	ND	ND	MDD	1) Online intervention	8 weeks / ND	1) CBT
Rollman [80] (2018)	704	1) Internet-based CBT supported by collaborative care manager 2) Internet-based CBT supported by collaborative care manager plus access to internet support group 3) TAU	Collaborative care approach	42.7 (14.3)	79.8	MDD (81.2%), generalized anxiety disorder (53.5%), panic disorder (15.8%), MDD and anxiety disorder (72.3%)	1) Online intervention, telephone (for care managers contact) 2) Online intervention, telephone (for care managers contact),	1), 2) 26.1 weeks / 8 sessions	1),2) CBT
Rosso (2017) [81]	77	1) Internet-based CBT 2) monitored attention control	Stand-alone intervention	ND	68.8	Recurrent MDD (74.0%), single MDD (26.0%)	1) Online intervention, telephone (for supporting contacts)	10 weeks / 6 lessons	CBT
Sandoval (2017) [82]	45	1) Interactive media-based, computer-delivered depression treatment program 2) no treatment control condition	Stand-alone intervention	ND	62.0	MDD (95%), dysthymia (5%)	1) Computer-delivered intervention (at study site)	6 weeks / 6 sessions	PST
Schuver (2016) [83]	40	1) Yoga intervention 2) walking control	Stand-alone intervention	42.7 (4.95)	100	MDD	DVD (for Yoga or walking, telephone (for contact to counsellors)	12 weeks / 8 sessions	Mindfulness-Bases Stress Reduction (MBSR)

Selmi (1990) [84]	36	1) Computer-administered therapy 2) therapist-administered therapy 3) waiting list	Stand-alone intervention	28.2 (5.0)	63.9	recurrent MDD (19.44%), single MDD (80.6)	1) Computer-delivered intervention (at study site)	6 weeks / 6 sessions	CBT
Smith (2017) [85]	270	1) Internet-based CBT, 2) self-help book (CBT), 3) self-help book (meditation), 4) waiting list	Stand-alone intervention	ND	81.9	MDD	1) Online intervention, optional email/telephone contact to technician/clinician	12 weeks / 6 modules	CBT
Steinmann (2020) [86]	59	1) Telephone CBT with reminding letters 2) telephone CBT without reminding letters	Stand-alone intervention	45.5 (13.6)	72	MDD	1) Telephone-delivered 2) telephone delivered	9 to 13 weeks / at least 9 sessions	CBT
Thase (2018) [87]	154	1) Blended CBT treatment 2) face-to-face CBT	Blended treatment	46.3 (14.3)	66.2	MDD	1) Online intervention	16 weeks / 9 modules (online) plus 12 face-to-face sessions	CBT
Titov (2010)* [88]	141	1) Internet-based CBT plus technician support 2) Internet-based CBT plus clinician support 3) waiting list	Stand-alone intervention	43.0 (12.9)	74	MDD	1), 2) Online intervention, telephone (for clinician/technician contact)	1), 2) 8 weeks / 6 lessons	1), 2) CBT

Titov (2011) [89]	77	1) Internet-based CBT 2) waiting list	Stand-alone intervention	43.9 (14.6)	73	MDD (51%) (results for depression subgroup reported separately)	1) Online intervention, contact to clinician via instant messaging or telephone	10 weeks / 8 modules	CBT
Torkan (2014) [90]	39	1) Positive imagery cognitive bias modification, 2) non-imagery control condition	Stand-alone intervention	ND	64.1	MDD	1), 2) Computer-delivered intervention	1 week / 7 sessions	1) CBM
Vernmark (2010)* [91]	88	1) Email therapy, 2) internet-based, CBT 3) waiting list	Stand-alone intervention	36.8 (12.9)	68.2	MDD	1), 2) Online Intervention	1), 2) 8 weeks / 8 modules	1), 2) CBT
Watkins (2012) [92]	121	1) Cognitive bias modification plus TAU 2) relaxation training plus TAU 3) TAU	Enhanced stand-alone intervention	ND	71.9	MDD	1)CD-ROM (with exercises), telephone	8 weeks / ND	CBM
Watts (2013) [93]	52	1) Mobile-based intervention (via an application) 2) computer-based intervention	Stand-alone intervention	41.0 (12.4)	80	MDD (mild (50%), moderate (23.5%), severe (14.7%), based on PHQ-9 severity Status)	1) Access to intervention via app (mobile phone or iPad) 2) Access to intervention via computer	1), 2) 8 weeks / 6 sessions	1), 2) CBT

Welch (2019) [94]	14	1) eCBT plus transcranial direct current stimulation, 2) eCBT plus sham stimulation	Stand-alone intervention	53.21 (12.48)	85.71	MDD	1) & 2), Computer-delivered intervention (at study site)	1) & 2), 4 weeks / ND	1) & 2), CBT
Williams (2013) [95]	69	1) imagery-focused cognitive bias modification plus internet-based CBT 2) waiting list	Stand-alone intervention	ND	76.2	MDD	1) Online interventions (CBM, CBT)	11 weeks / 7 CBM sessions plus 6 CBT sessions	1) CBM, CBT
Williams (2015) [96]	121	1) Positive imagery cognitive bias modification plus internet-based CBT 2) control cognitive bias modification condition plus internet-based CBT	Stand-alone intervention	ND	73.3	MDD	1), 2) Online interventions (CBM, CBT)	1), 2) 11 weeks / 7 active/control CBM sessions plus 6 CBT sessions	1) CBM plus CBT, 2) control CBM plus CBT

Wright (2005) [97]	45	1) Blended cognitive therapy 2) face-to-face cognitive therapy, 3) waiting list	Blended treatment	ND	75.6	single MDD	1) Computer-delivered intervention (at study site)	8 weeks / 9 face-to-face session followed immediately by 8 computer sessions	1) Cognitive therapy (or CBT)
Zagorscak (2018) [98]	1089	1) Internet-based CBT plus standardized, automated feedback and contact on demand 2) internet-based CBT plus semi-standardized e-mail feedback	Stand-alone intervention	45.7 (11.3)	65.6	Single MDD (42.1%), remitted MDD (26.2%), dysthymia (8.3%), double depression (5.3%), Bipolar or NOS (6.0%), no current/past affective disorder (12.2%)	1), 2) Online intervention	6 weeks / 7 modules	1) ,2) CBT
Zwerenz [99] (2017)	611	1) Blended treatment (inpatient face-to-face sessions plus internet-based CBT), 2) Active control group (inpatient face-to-face sessions plus online information on depression)	Blended treatment	48.0 (9.8)	60.7	Recurrent MDD (65.9%), single MDD (31.9), depression severity: mild (0.01%), moderate (79.9%), severe (16.6%) according to ICD-10 classification.	1) Online intervention	12 weeks / 12 modules	1) CBT

Note. * = Study arms were summarized for meta-analysis. N = Number of participants randomized; M = Mean; SD = Standard deviation; MDD = Major depressive disorder; ND = No data; PHQ-9 = Patient Health Questionnaire 9 item; BDI = Beck Depression Inventory; CBT = Cognitive behavioral therapy; iCBT = Internet-based cognitive behavioral therapy; TAU = treatment as usual; NOS = Not otherwise specified; GP = General practitioner; GAD = Generalized anxiety disorder; BA = behavioral activation; f2f = face-to-face; CBM = Cognitive bias modification; TAU = Treatment as usual; PP = Positive psychology; CF = Cognition focused; CT = Cognitive therapy; PA = physical activity; PST = Problem solving therapy.